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CLASSIC TOY TRAINS

O AND SCALE FOR THE OPERATOR AND COLLECTOR

BLAST OFF!
Lionel's Union Pacific rocket booster train set p. 6

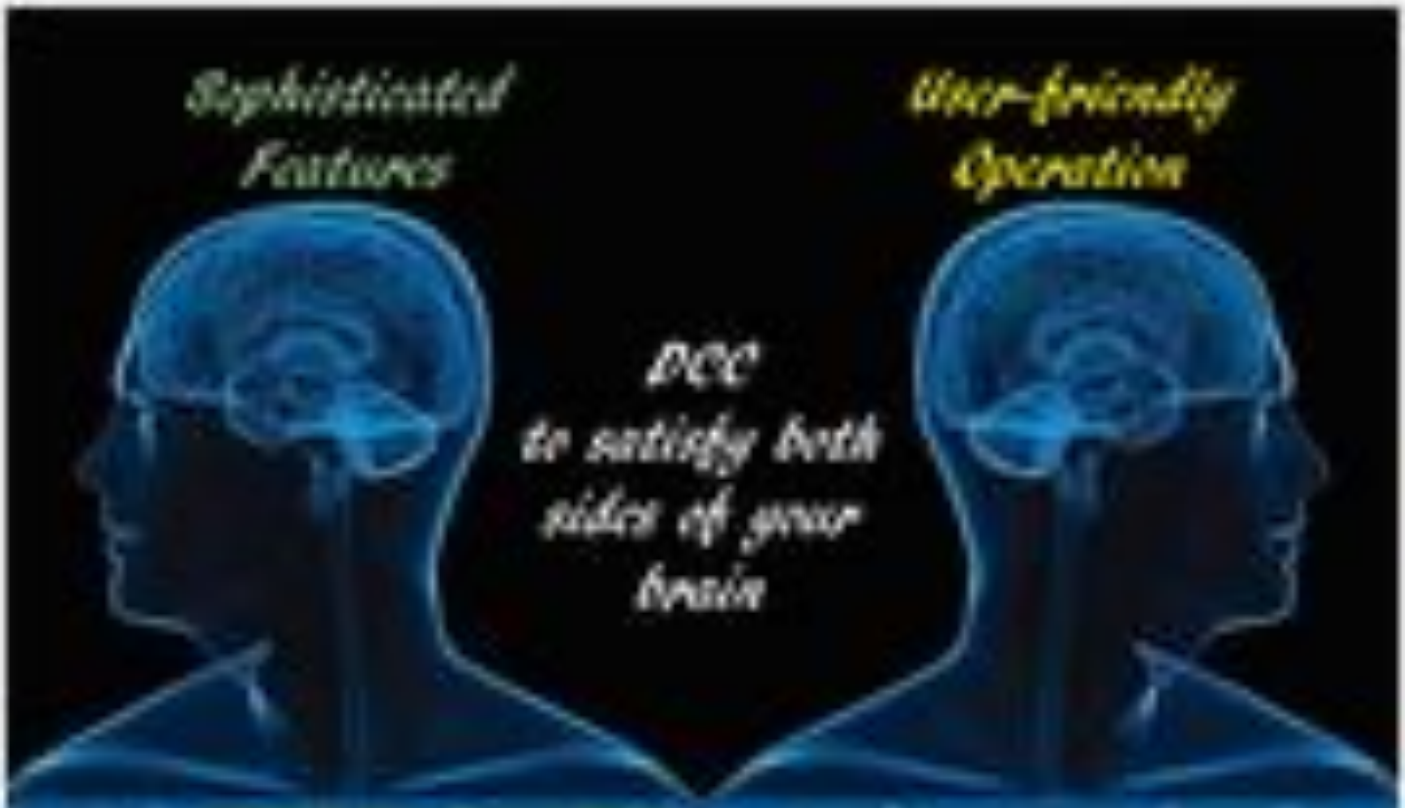
Real is the deal!

SPECTACULAR SCENERY ON THIS O GAUGE LAYOUT

A Standard gauge layout of distinction p. 36

Colorful Marx 8-wheel Alco diesels p. 42

The Milwaukee Special adds realism p. 48



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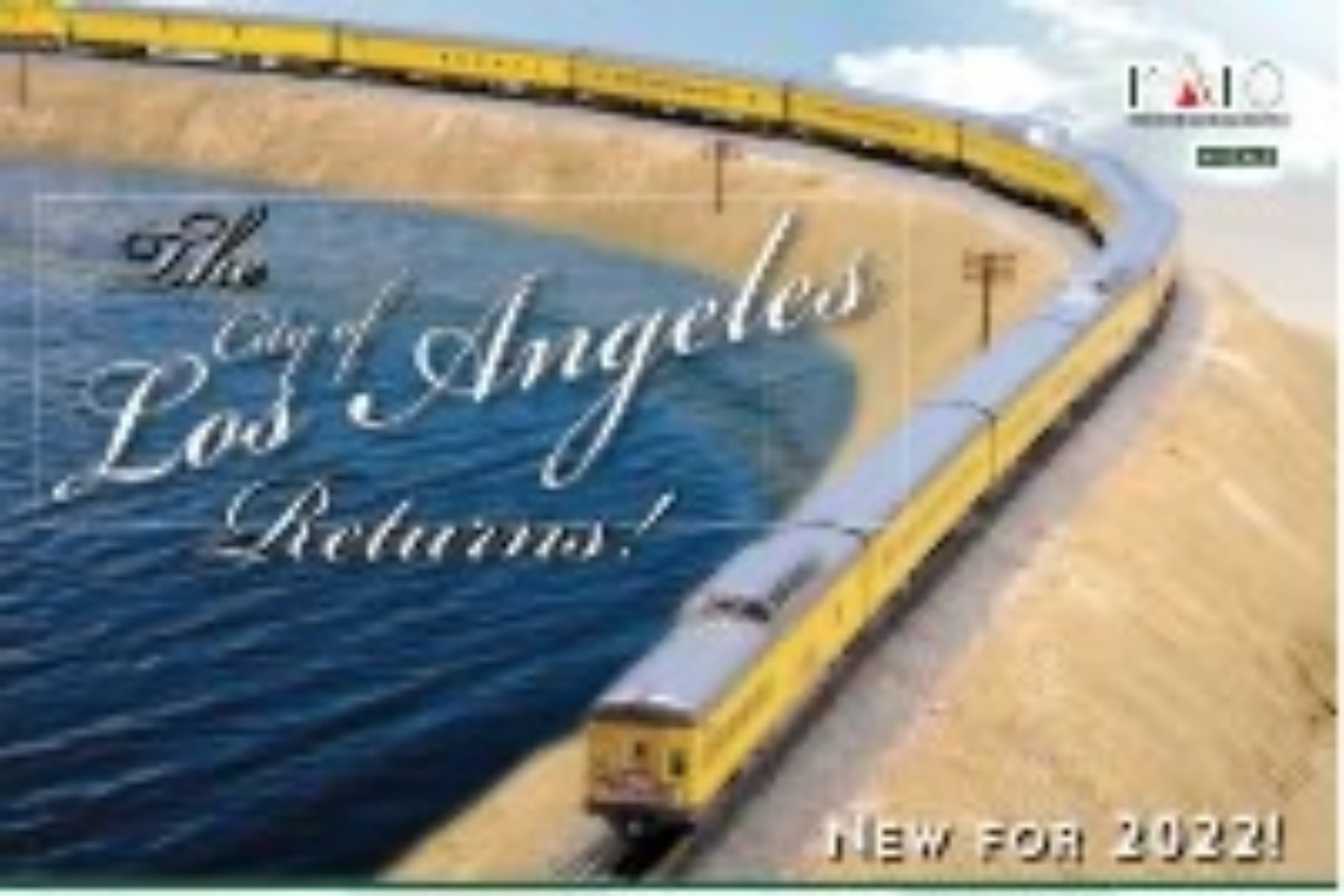

The "City of Los Angeles" – with its Harry Vick design (named "Train Room"), including the first dedicated dome dining car, will take Union Pacific's streamliner story into the world of Classic-named Trains. Now you can add this historic train to your collection with the 11-Car VP "City of Los Angeles" Set and Kato USA, available now at your friendly hobby retailer!

Kato USA will be re-releasing this Classic Named Train set this May, with all-new road numbers and car names along with its signature E8 + E9 locomotives! The locomotives releasing with this train will also be offered with available DCC or ESU LokSound, while the 11-car set will be available with pre-installed interior lighting!

Item #	Description	MSRP
106-000	**N Union Pacific "City of Los Angeles" 11-Car Set** (w/o sound)	$[illegible]
176-0003	N EMD E9A Union Pacific #947	$[illegible]
176-0004	N EMD E9A Union Pacific #948 w/ Digitrax DCC	$[illegible]
176-0004	N EMD E9A Union Pacific #948	$[illegible]
176-0004-DCC	N EMD E9A Union Pacific #948 w/ Digitrax DCC	$[illegible]
176-0006	N EMD E9B Union Pacific #949	$[illegible]
176-0006-DCC	N EMD E9B Union Pacific #949 w/ Digitrax DCC	$[illegible]
176-0007	N EMD E9B Union Pacific #949	$[illegible]
176-0007-DCC	N EMD E9B Union Pacific #949 w/ Digitrax DCC	$[illegible]

106-0001	**N Union Pacific "City of Los Angeles" 11-Car Set** (w/ sound)	$[illegible]
Available	HO/O E9A Union Pacific #947 w/ ESU LokSound	$[illegible]
Available	HO/O E9A Union Pacific #948 w/ ESU LokSound	$[illegible]
Available	HO/O E9B Union Pacific #949 w/ ESU LokSound	$[illegible]
Available	HO/O E9B Union Pacific #949 w/ ESU LokSound	$[illegible]

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HO PRR P5a ELECTRIC

IT'S BEEN A WHILE SINCE WE'VE RELEASED AN ELECTRIC. IT'S BEEN TOO LONG. ACTUALLY, TO MAKE UP FOR THIS INJUSTICE WE'VE GONE ALL OUT ON OUR P5a. SPARKLING PAINT JOB AND ASTOUNDING DETAIL AND BREATHTAKING PAINTED WITH ROLLING THUNDER™ SOUNDS. ARRIVING FEBRUARY 2019.

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Athearn Genesis 2 Diesel DCC/Sound	Kansas City Southern #9 SD70ACe
Athearn Genesis 2 Diesel DCC/Sound	Norfolk Southern #9 SD70ACe
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Spring/Summer 2015

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Athearn Genesis 2 Diesel DCC/Sound	CSX #9 SD70M-2
Athearn Genesis 2 Diesel DCC/Sound	CSX #9 SD70M-2
Athearn Genesis 2 Diesel DCC/Sound	CSX #9 SD70M-2
Athearn Genesis 2 Diesel DCC/Sound	Kansas City Southern #9 SD70ACe
Athearn Genesis 2 Diesel DCC/Sound	Norfolk Southern #9 SD70ACe
Athearn Genesis 2 Diesel DCC/Sound	Norfolk Southern #9 SD70ACe
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Also available without sound

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RAILMODEL JOURNAL

August 1992 — Volume 1, Number 3

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Departments

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Joys of accessories

A SALUTE TO THE MODELS THAT DEFINE THE HOBBY

In May, the 15th anniversary year of Classic Toy Trains magazine, we're thinking about what makes this hobby so meaningful and entertaining. Every issue from the very first one in the summer has had at least one article about model railroad accessories. Sometimes we've featured a single accessory, such as a billboard, a water tower, or a freight station. Other times we've covered a whole group of accessories, such as a set of lamp posts, a collection of vintage signs, or a variety of trackside details.

Why do we do this? Because accessories are the perfect way to add realism to your layout. Trains are fun to watch, but they're not very realistic. Unless you're modeling a railroad that runs only through uninhabited wilderness, you'll want to add buildings, vehicles, and people to your layout. Accessories are the perfect way to do that.

Accessories are also a great way to express your personality. Do you like to model a particular region of the country? Then you'll want to add accessories that are typical of that region. Are you a fan of a particular railroad? Then you'll want to add accessories that are specific to that railroad. Are you a fan of a particular era? Then you'll want to add accessories that are typical of that era.

Accessories are also a great way to add interest to your layout. A layout with a lot of accessories is more visually appealing than a layout with few accessories. Accessories can also help to tell a story. For example, a layout with a lot of accessories that are typical of a small town can tell the story of that town.

Accessories are also a great way to learn about the prototype. By researching the accessories that are typical of a particular region or era, you can learn a lot about the history and culture of that region or era.

So, whether you're a fan of a particular region, era, railroad, or just a fan of trains in general, accessories are a great way to add realism, interest, and personality to your layout.

Roger Carp

YOUR EDITORIAL STAFF

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Convention Highlights Include:

- Arnold & Velma Nevin Excursion
- Edgerton Model Railroad Club layout
- Corning Museum of Glass
- Falls Branch Railroad Excursion
- Medina Railroad Museum and layout
- Non-Local Meet n Greet
- Nine Foot Museum of Transportation
- George Eastman House
- Stonebridge Gardens & Mansion
- Tickets to the rest of the Rural wealth train layouts in the area

General Electric Dash-9 CW diesel locomotive. These are work-train units pre-ordered for BNSF Ry., General Electric demonstrators, Canadian National (CN), Norfolk Southern, and Union Pacific in the road numbers pre-ordered. This N scale models part of the locomotive from Proto Control line, have railroad-specific details and factory-installed sound grade more. Direct-current models with an ESU NextDCC connection are priced at $[illegible]; versions with an ESU LokSound NextDCC (select-Mono) digital command control and sound decoder are for $[illegible]. Visit Proto2000.com Inc., 800-527-2802, www.walthers.com.

HO scale locomotives

• General Electric ES44AC diesel locomotive. BNSF Ry., Canadian National, Canadian Pacific, CSX, Kansas City Southern, Norfolk Southern, and Union Pacific. Two road numbers per scheme also available undecorated. Photo: Kato; die-cast metal chassis, lead-weighted; motor-equipped; and dual-mode (Tsunami2 sound) decoder with docking. Prototype: 4,000 HP Evolution Limited Emissions. $[illegible]; 800-477-8900; www.broadway-limited.com.

• Union Pacific Electro-Motive Division E9A and E9B diesel locomotive. One DRAB (UP) E9A of Los Angeles Working backup lights on A and B units; omnidirectional front and rear gyro and marking lights on E units; one set A each. Prime current models

low-number pre-ordered. A unit $[illegible]; B unit $[illegible]. White dual-mode DCC (Railbound Select) sound decoder now available pre-ordered. A unit $[illegible]; B unit $[illegible]. Available 2019. Prime delivery May 4. Walthers Inc., 800-247-1076; www.walthers.com.

HO scale freight cars

• Offset-hopper cabooses. Southern Pacific & Santa Fe (depicting months split or not split small offset circle cross herald); Chicago, Rock Island, Gulf (depicting and gold); Missouri Pacific (depicting & the Granite Mountain Route). Eleven horizontal spine and offset); Indiana Harbor Belt (orange and black, two numbers); and Rock Island (black letter-ing). Auto Racks: Autorack (wing-spread cabinet) trucks, separately applied handrails and Detail-mounted brakeshoes and couplers. $[illegible]. Stock. Available Jan. Athearn Trains; 888-728-4476; www.athearn.com.

• 70-ton one-piece gondola three-bay hopper. Nine road numbers Chicago, Burlington & Quincy (black with white "Burlington" billboard lettering); Central Vermont (maintenance of way); Chesapeake & Ohio ("Mudding Service Only" lettering); Clinton Forest & Western & Ohio lettering, Nine Jack Daily Canadian Pacific ("Coal Loading Kanata"); Western Kansas Grain ("The Ruby Service the Southwest" slogan); and Reading & Northern ("Anthracite Coal Service" lettering). Flat or gasket-sealed or appropriate coverable load and accessible couplers. Four road numbers per scheme. Single car; $[illegible]. Available $[illegible]. Overseas Sup. Area. Model Railroad Co., 888-887-3888; www.atlas.com.

• Pennsylvania 89 class G26a, G26 and G26b box cars. Offer Control, Wood or steel, and Intermediate 89 (Jim Penn Central and PRR, CPR, Central, PC, and PRR G26 and G26b cars in six road numbers each. CPR in three numbers each. Correct, solid bearing, or roller bearing trucks as appropriate, metal wheels, and separately applied details. $[illegible]. Later 2019. Bowser Manufacturing Co. Inc., 800-537-1030; www.bowser-trains.com.

• **Delaware & Hudson Railcar.** Covered, hi-cube, 6-panel 50-foot exterior post boxcar. Prototype built 1960-1961. Features include: Dreadnought end, Apex roof, Improved Dreadnought end, Improved Apex roof, Improved Dreadnought end with Apex roof. Available in Gray (Red), available in Gray (Red), available in Gray (Red). Tooling: Accurail. #40-1220-1999. www.accurail.com

• **Accurail Pullman Standard box cars.** Fallowing: Southern 36-foot 6"i Ribbed, 1939-50. St. Louis Southwestern 6-panel, double-sheathed door, 40-foot 6"i Youngstown Door "Wide Vision" Outside Braced "Improved" Boxcar (1964-1969). Toledo, Peoria & Western 40-foot 6"i Youngstown Double-Sheathed Door, Outside Braced "Improved" Boxcar (1964-1969). Injection molded plastic model with wire grab irons, separate stirrup steps, and separate brake wheel. Decal options for each car. Tooling: Accurail. #40-1220-1999. www.accurail.com

• **Industrial Rolling Stock: Gondola Scrap Body.** Includes: 1 body. Fits Accurail, Atlas, Bachmann, Kadee, Life-Like, Model Power, Walthers, and other 1:87 scale 40-foot cars with 33" wheels. Prototype: Various railroads. Tooling: Accurail. #40-1220-1999. www.accurail.com

Southern Pacific (Inside Braced) Outside Braced 40'2"6" Improved Boxcar with Dreadnought Ends and Apex Roof. Prototype: Southern Pacific (Inside Braced) Outside Braced 40'2"6" Improved Boxcar with Dreadnought Ends and Apex Roof. Tooling: Accurail. #40-1220-1999. www.accurail.com

HO scale passenger equipment

• **Union Pacific 1960-1971 City of Los Angeles.** American Car & Foundry 60-foot Low Dome lounge, 44-seat coach, baggage-lounge-dormitory, cafe-lounge, dome coach, and dome-diner. Built 81-foot car. Pacific series 46 coaches, 4 double bathroom designs. Pullman-Standard 60-foot Low Dome series 5 bedroom, 3 compartment, 2 observation cross-section and World series 10 double-bedroom-buffet. Each car available with decal car names and numbers or factory lettered. Models include window lining and black gaskets as appropriate, optional roadbed, detailed corrugated underframe, 33" radius curves factory installed stainless steel grab irons, detailed plastic trucks with body to electrical contacts, and Protor Alco couplers. Tooling: Accurail. #40-1220-1999. Also deluxe 36-car sets also available with dynamic pinpoint lights and backlights, factory installed light covering, driver lights on

In Memoriam

Lionel Polk (1928-2018)

Lionel Polk, 90, owner of Accurail Craft Trains for many years, died on April 21, 2018.

Accurail Craft Construction Miniatures (later Accurail Craft Trains) was founded by Lionel, father, Ted Polk, and his brother, Jack. The company initially offered O and HO scale trains. In 1988, under the Railway Express Agency name, Accurail Craft started producing models of standard gauge trains in 1:20 proportion.

Ted ran the company until he retired in 1994, at which time Lionel and his wife, Marjorie, took over. The company ceased doing business at the end of 2013.

Mike Schafer, Editor, Garden Railways magazine

operations), and seven Even (20 Prototypes figures and passengers. $1,000 early bird through September 30th. From www. Mike R. Walthers Inc., 414-351-8778. www.walthers.com

HO scale structures

• **Overlook Hotel.** Cast Plastic w/ full-wall, one-story details, overhead fixtures, and numbering instructions. Figures not included. Dimensions: 4.3" x 7" 888-91. Manufacturer Plastic. 888-925-9335. www.downtownmodels.com

Custom lighted vehicle. Earl Coate Circuits has expanded its line of custom-lighted vehicles with this Rose Point Station (NC)-scale Ford Expedition police service. The model has four stopping features: 16 light-emitting diodes (red and blue on front, back, and sides), four flashing systems, and flashing headlights and taillights. The lights require 9.12V DC input. Add $ and $ (shipping). www.earlcoatecircuits.com

• Skalgirl's warehouse [illegible] $ [illegible] x 1/16" (1.5 x 1.6). Price and size vary based on markings you specify. skalgirl.com

HO scale details and accessories

• MDC® high-gravity compound two-piece equalized trucks. 1.1" wheels, 9'-6" wheelbase. American Steel Foundries A-3 Ride Control, Andrews (3/8"), Bettendorf (1" section), and Hobbs. All trucks feature .36" RP-12 contour tone magnetic ribbed back wheels and three nylon-tit assembly bushings. $11.99 per pair. Bowser Quality Products Co., Inc. 570-326-3681, www.bowser.com

• Atlas Gold Series 50/60/80 medium/heavy-duty wishbones. Change truck and railroad maintenance of way truck. 1:87 printed trail mixing details. Printed [illegible]

Ultra Detail, 50/100 Custom Options Wheels of Time, www.wheelsoftime.com

N scale locomotives

• Electro-Motive Division GP38 diesel locomotives. New paint schemes (Kansas City Southern Locations Rails scheme); Antonio Jaquez (Texas-Mexican) Locomotive Pacific Unit with "Locomotive Pacific" lettering on long hood; and Norfolk Southern Operation Lifesaver and Erie Locomotive schemes, one road number each). Pilot numbers (Range 6-horizontal unit, gray and black); Electrogram, Northern N second trains and black with white area stripes); Chantal Hobbies (Transportation Hobbies running number). Consist lights and wheels and Locos Pacific Crossing "Yellow and Outline West Units"). Two locomotives per scheme; motors sound, also available undecorated (with post with one dynamic brakes). Pilot-mounted gyrolite rotary light running sheds head lights, brass speed covers, and decorative couplers. Fifteen versions needed. $124.95; and $142 Locomotive Digital Command Control sound decoder (various schemes). Fourth quarter 2008. Atlas® Low Valley Model Railroad Co., 800-581-4888, www.atlasrr.com

• Electro-Motive Division SW1 and SW1200 diesel locomotives. Choose Pacific Two numbers per body style. With the same road number (Union Pacific yellow/white light running sheds head lights, and illuminated number boards; Norfolk Southern Erie grab irons; all-wheel drive and flat-faced wheels. Direct-current models equipped for Train Control Systems (DCS) version or Digital Command Control motor decoders, add $20 (DCC). $124.95; With factory-installed Direct Current Digital Command Control motor decoder. $145; $165 (DCC). August-September 2008. Atlas (704 Inc. 847-781-6500, www.atlasrr.com.

N scale freight cars

• General American Transportation Corp. 2,500 cubic-foot capacity 40'6" single-sheathed boxcar. Editions in White (gray with billboard "B&O") and Aqua (white with aqua-only applied plastic). Control (Penn Central) patchwork (tan gray with billboard white) and distressed (white). Metal trucks (Big Six (Blue or one ceramic and gray) and Wisconsin Road (billboard white) ngs. Three numbers per scheme; orders noted. Freestyle-specific weights are through metal running boards, and body-mounted Kadee® scale couplers. $27.98; released). Athearn Trains, 800-733-4628, www.athearn.com

• Gunderson Maxi-IV three-unit articulated well car. 111', two-rail Numbers. With six 2 stacked containers (ISO) or five stacked containers. Multi-part details and component pieces (intermodal, 19" and 36" metal wheels, and fresh couplers. Each customer has a stepped and metal plate. $139. September 2008. Atlas (704 Inc., 847-781-6500, www.atlasrr.com

• Assorted freight cars. Bronze Collectible No. 26-foot general service cars set: $25.95; Chicago, Burlington & Quincy 36-foot single-sheathed 7'-1" door

Thrall 4,727-cube flush-capacity carbon black covered hopper. The N scale Thrall 4,727-cube flush-capacity carbon black covered hopper is decorated for Columbian Chemicals (Seguine, Illinois, and Sid Richardson). The model sells for $21.99 (kadeltrains.com, some assembly required).

Model Railroader animated billboard. Produced exclusively for Model Railroader by Miller Engineering, this multiple scale sign ($39.95) features the three patterns. The sign requires three AAA batteries. (Kalmbach Hobby Store, KalmbachHobbyStore.com)

40-foot corrugated-top intermodal container with corrugated sides. Jacksonville Terminal Co. offers these models in N scale containers lettered for United Arab Shipping Co. (hapag-lloyd, hong kong shipping lines). Grand Haul boxes operate and transparency. The containers feature magnets and road plates for secure stacking. A two-pack retails for $39.95 (jacksonville terminal co., www.shopmodelrings.com).

Electro-Motive Division FAT1200 diesel locomotive. Milwaukee Road is one of eight paint schemes on this grab-cab switcher. The N scale diesel-current model sells for $59.99. Mini- A. Matthews Inc., www.walthers.com

Milwaukee, Racine & Troy white cupola caboose. Atlas offers these N scale models exclusive for Model Railroader's club layout. The Milwaukee, Racine & Troy (MRT) rolling platform is offered in one number, the MRT caboose is available in two numbers ($29.95 each). Atlas Model Railroad Co., www.atlasrr.com

dormitory Superliner II transition sleeper. Kato offers this injection-molded plastic model with a detailed interior, trucks with rotating bearing caps, and modeler-installed trip pins on the couplers. The transition sleeper's marker lights can be illuminated with an optional lighting circuit board (separately). Kato USA Inc., (847) 290-6900, www.katousa.com

N scale details and accessories

• 1970 Ford F-100 pickups. Nine paint schemes: Candy Apple Red and Wimbledon White; manufacturer-of-your-choice; Acme Black, Sequoia Brown, Wimbledon White and Poppy Green; and Wimbledon White. Part pack, $18.95 (two truck kits/box, $10.95; unassembled, $18.95). Atlas Model Railroad Co., 800-487-4653, www.atlasrr.com.

• 57-Ton hi-rail rotary dump truck. Cast-steel cab, one-piece dump body, plastic castings, vacuum-formed steel decks, and modern and photo-etched parts. Hi-rail wheels can be mounted to create a ground position. $215.95. Showcase Miniatures, (734) 729-5725, www.showcaseminiatures.com

• Assorted dump trucks. Kenworth T800 (Kenworth W900L and Peterbilt 379; Black Max Hydraulic or Transformation Design (TMH units) not

N scale passenger cars

• Union Pacific City of Los Angeles passenger train. Paint, car numbers, lettering, and "baggage" and dormitory cars for your coaches, dome, diner, lounge, 10 coaches, 4 double-bedroom sleeper, dome diner, 1 double-bedroom lounge, sleeper, 1½ double-bedroom sleeper, and dome lounge observation. Each car features Kato Magne-Matic coil Kato couplers. Interiors can be illuminated with Kato no. 24-201 or 24-202 lamppost. 7" observer light kit with white light, warning strobes, and operation. $288. Kato USA Inc., (847) 290-6900, www.katousa.com

N scale structures

• Subway restaurant. Molded-plastic kit with clear window glazing, iron, door frames, and signs. Measures 3" x 4-1/2" x 2-1/2". $19.95. Jacksonville, FL, www.jacksonvillecorp.com

Lighted vehicles. Woodland Scenics has added to its Just Plug line with O-scale vehicles, including a blue coupe and a police car. Each vehicle ($20.99) includes a driver and light-emitting diode headlights and taillights. The police car features a flashing light on the roof. Woodland Scenics, 570-946-9278, www.woodlandscenics.com.

Baldwin 901-903 diesel locomotive. Rivet Counter's O-scale Baldwin 901-903 diesel locomotive with "Beasts of the Rio Grande" slogans. Kit boasts "plastics & resins for cutting-edge Lehigh Valley (red, gray and yellow), Nashville, Chattanooga & St. L. (maroon and gold), Southern Pacific (black and orange), and Western Pacific (blue and orange)." One road number per scheme. Kits available undecorated. Detailed cab interior. Kit cuts wood, styrene, brass, and photo-etched chassis. Optional light-emitting diode headlights. Wide-body cab. $230. Lighted kits $270. Undecorated kits $175. Undecorated, unpainted, resin kit $150. Rivet Counter, 313-565-7033, www.rivetcounter.com.

O scale freight cars

10,000-gallon corn syrup tank cars. Intermountain Railway Co. has four 10,000-gallon tank cars in its Corn Processing Body Products Division (CPB) lettering scheme and Union Tank Car Co. ("Corn Products" lettering) fleet. Features include: Accurate Detailed Modified Woodcock-type 2-weight-truck ("Corn Processing" lettering), and Ortner Transportation Underframe (all versions except yellow ones); also available undecorated. Separately applied brake detail; 36-in-dia rolled bearing tracks with rotating bearing caps; and

Northern Pacific class U-1-A 4-8-4 no. 61 Challenger steam locomotive. Northern Pacific Scale no. 61 tender, one number (west) and Spokane, Portland & Seattle full tenders, one number (east) and "Big Four" Scale no. 61 tender, one number (east) and "Big Four" number 61 tender, one number (west) and "Big Four" number 61 tender, one number (west) and "Big Four" number 61 tender, one number (west

Tools

+ Model (1/4 Wide Shear Push on Tip. Right-carbon steel with two glass black thumb, soft rubber hand grips, and Light Touch elastic springs. Designed for cutting plastic, soft wires and lead up to 1mm thick. 5"/13. Xuron Corp., 847-741-1626, xuron.com.

Software

+ RailModeller Pro 6.0. A polished version of app for planning model railroad layouts. New features: Commands (macros allowing users to share and process layouts at the click button), Log-to app. Several updates coupled to the unnecessary for inspiration and the user designs while Albion model railroad are while protecting user privacy. Requires OS X 10.10 or later, on the app version, and 1G RAM plus space. $39.99. Free upgrade for all users of the app. See all the features at www.railmodeller.com.

Games

+ Hasbro The Game Set Game. A landmark a model railroad, and features and rules, and take the routes at once you enjoy. Requires Windows 7/8/10 (64-bit) operating system, 512 MB RAM memory, and 3GB available hard drive space. PC download version: $9.99. Classified Games, 1-877-7GAMES, www.classified-publishing.com.

Downloads

+ Assorted paper model railroad products. Urban structures buildings, miscellaneous, concrete loading docks, and styles, railway others), vehicles trailers and intermodal containers, and various electric telephone bridge, diesel, concrete corrugated metal, and rail paper railway others. Includes 2, N, O, S and 1:87 (HO) and 1:160 scales. Prices vary based on product. From Track Models, www.railway-models.com.

Books

+ Great Railroad Series: Our First Locomotive. My busy brother, Cindy and Uncle shows the beginning of a model railroad. The first locomotive, saved from the scrap pile, continues his new role and discovers adventures that wait in his own home. Paperback, 24 pages, $5.95. Available at www.passengercars.com and www.greatrailroadseries.com.

+ Railway Prototype Cyclopedia Vol. 28. By Patrick Nilan and Ed Hawkins. Covers data on leading characteristics of American Railroads rules, narrow-commodities, and freight cars and classic revenue. 1,000 color four captures. Includes several top-pass (part 1, original drawn) cars. Other (HMS). Softcover, 512 pages, $45. Free shipping on the United States. Customers and save from both customers with appropriate sales tax. Represented by Kalmbach Books, 800-533-6644, www.kalmbachbooks.com.

Chesapeake & Ohio 1924 to 1971 George Washington passenger equipment. The first three cars finish-stainless steel lighted train are of notably simple now, including a Pullman standard 8F/4 roomette, 4 double-bedroom buffet-side sleeper without duty $74.95, and an Observation Car & Heavenly heavyweight-armrest roof baggage car. $69.95. The masterpiece Lion-Nose Service installed and painted over gold rivets and all native and number decals. Min. R. Brightwell Co., 414-321-3270, www.walthers.com.

+ Steel Railroad Series: Our First Locomotive. My busy brother, Cindy and Uncle shows the beginning of a model railroad. The first locomotive, saved from the scrap pile, continues his new role and discovers adventures that wait in his own home. Paperback, 24 pages, $5.95. Available at www.passengercars.com and www.greatrailroadseries.com.

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+ Paper Structures and Scenery for Model Trains. By Dominic Gilham. Nine half of the book describes the tools, skills, and techniques involved in using paper on model railroad and our track layouts. Second half walks readers through applying both and skills to the plans of projects. Materials and techniques are included for N, OO, and O scale. Paperback, 96 pages, $19.99, kalmbachbooks.com.

+ 3-D Printing & Laser Cutting: A Railway Modelling Companion. By Jeff Kinsey and Dave Bowman. Covers the principles of 3-D drawing and a review of some of the 3-D software packages available now online, including several tools for constructing freestyle structures, rolling stock, and accessories. Also includes information on how to use a 3-D printer. Work time, 160 video photos and diagrams. Introduction, 400 pages, $24.95. Produced by Crowood Publishing, available from Specialty Press, 800-895-4585, www.specialtypress.com.

Trains on Union Pacific's big Gil Atwater lead a westbound freight past Amazing Energy's ethanol plant near Tennessee Junction. Bruce Chubb photo

Ethanol plant color scheme

I've been working my weekend hill ethanol plant. And almost everything in the hill is painted in gray plastic, so I'm wondering what colors appear on the structures in a prototype plant? John Compton, Mobile, Ohio

Ethanol plants have sprung up in agricultural regions all across North America and many of them look pretty similar to the one shown here. Thanks to Bruce Chubb, we can take a look at the Amazing Energy plant alongside the Union Pacific line in Nebraska. Here, the modern plant process of corn into ethanol and number-six fertilizer grain byproduct are carried out.

Ethanol plants are relatively easy-care! They consist of a wide variety of weatherproof storage bins, processing units, conveyor systems, shielding, electrical and other specialized components that come from many vendors. Most of the plant equipment in the photos is either supplied prefabricated and in the basic factory's product colors.

Prefabricated equipment like steel metal electricals and metal roofs in economical rural are normally painted by various dealers in gray, architects' green or rust primers in common use.

Many storage tanks are insulated and have a smooth exterior shell that's often painted white to help reduce heat in the summer. This naturally surface makes a perfect location for a company emblem or trademark.

Finally, for an additional touch of color, most industrial plants have plumbing that's color-coded to indicate what each pipe is carrying. Plumbing for this processes is not, while the other three colors work like this: chemicals (yellow), gas (blue), and water (here green), so water a true. Most other pipe color codes use by brand and an internal scheme ... the designer seems about.

Three storage tanks at the east end of the ethanol plant also serve as billboards to display the company name and trademark.

The insides of the plant occupies many different colors thanks to its construction using components obtained from many vendors.

Remote control prototype?

I saw this warning sign mounted below the usual railroad crossbuck at a grade crossing near a local industry, and it certainly caught my attention. Can you explain how the remote control works?
Arif Ozkoroc, Conklin, Ga.

Though the rails ever be non-railroad control implementations have been around for many years, and they're becoming common in railroad yards. Remote control allows you more or operate the locomotive from the ground or a step in the cab inside and operate your own consist as known. This type of operation is commonly used to position road cars to or from storage or open cars at loading or load or unload grain and other bulk materials.

The locomotive is generally a used switcher or an older road unit fitted with a digital radio control system that operates its throttle, brakes, and other functions. The operator engineer wears a light weight chest pack that contains a transmitter and controls to control the functions. With the horn, or ring the bell. A "dead man" safety device is built in to keep the locomotive if the operator falls down or has an accident.

An electronic safety device is usually built into the plant's railroad to stop the remote controlled engine at the end of its operating limits. Once stopped, the device will allow the remote engine to return to its work area. For process further assistance forward the work order. – Editor

Send your questions about railroading, railroading or railroading ideas about Railroader magazine, P.O. Box 1810, Waukesha, WI 53187, or e-mail railroader@kp.com. We regret we can't answer all the questions we receive.

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John Kelly

Repairing older N scale handrails

Are bulk replacement handrails for Kato Unitrack/Atlas SnapTrack/Peco Small Radius/etc worth it? Or is it better to repair the long-lived originals? We're working on the long-lived handrail, the short-lived handrail broke, necessitating another repair. Once they're all painted they'll blend right in.

The important thing is to get the handrail down straight, and holding the railing in the vertical is easier than most users think.

The handrail replacement is left over on the right side of an Intermountain transit motor diesel. The rest is the first run of these original Intermountain models back in the late '90s, and has had some problems Intermountain corrected in the many runs made since.

Having these problems with the handrails in general and those on the right side in particular, kit bar handrails were exactly the ones on the right side would pop off if you ever looked at them wrong, which it kind of was at Model Railroader Video Plus even back when Jerry Glow was shooting video at our house. Off the handrail comes at the worst time at times.

I ordered a new set of handrails from Intermountain, but not problems comes and. Where the railing come off one small pin is back on nicely enough, but all the rest is bound to fall again. It's really a wonderful.

What did the one on the left look to you? Can the left side there's an ore dock that runs along the top of the walkway and gives the stanchions a little more support.

I had not the replacement handrail on as we starting board setup the basic Intermountain handrail for a guide and testing path down with masking tape. There's not about the directions to in the three-step railing from bag and trimming. Here is bought why the railing was soldered on.

All these hours you're soon moved in their systems to style assembly work. Just starts with a small soldering iron and where you have to a simpler joints. I attached by assembly to the rail at the horizontals with Walthers flux.

I've both handrails on other business. Now he drilling holes for the stanchions in the photos indicate, and certainly this is preferable. I unfortunately there just wasn't enough material on this model to do that successfully.

The rest not taken me about 1½ hours, but it's an investment I'll never regret. And it's on the layer and the rail. ■

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Realistic foundations for small structures

Cut stone foundations raise a structure off the ground to keep the woodwork dry and prevent rotting. Modelling them enhances realism

The underside height of Dr. Bob's Easy Building Bricks makes them easy to stack side-by-side on blank brickwork. Just run parallel to staggger the stone joints

Chisel-flexible pasa and chalk stone walls work well any place you need a taller foundation. This hyperbolic is sized from the front punch height

Only a few materials are needed to build Gregg's realistic foundations. A little patience and a few pieces of sheet and strip styrene or sheetboard do the job

Wooden Gregg Cardiff is an accomplished modeller and has made his share of the best methods to add realistic foundations to building in any scale. [2018]

Structural Solid Need of this is usually written into the world, rather than just confined on top of it. Any gaps between the base of a structure and the terrain are unrealistic, and the wooden structures that fully sitting on plastic can rot with the ground.

To place finished structures on the ground, I begin by making the structure's footprint on everything I can use as shape and glue to the base as a first step. This material can be foam scenery, 3/16" or 3/8" thick, foam core board, cardboard, or any other similar material that can't crumb disastrous. Sometimes I trace the structure right on the board and use the pencil lines as guides as I glue down a sculptured base.

I then apply the various construction structure size, making sure it's flush with the top of the scenery board.

With a good, solid base in place, most structures will need a foundation to support the building and look right. A wealth of model railroad products are available for making foundations, so let's take a look at two materials I've regularly that aren't sold as scenic, but still produce exceptional results.

Dr. Bob's Bake Building Bricks are small cylinders (like rolled) from a polymer clay base with edges trimmed like I've shown from here on height and width. I purchase them from a retailer's sale site called Dr. Bob's Bake Concentrate at www.dbbmdl.com.

The material thickness makes these bricks real to use for foundations. They're not wobbly, aren't a problem because they can be cemented into a foundation. Both on the outside where the exterior edges are hidden inside the walls. The remaining lengths also work out well as they add to the realistic appearance. Long pieces can be easily determined for building a block or piece and breaking off the excess with another set of pliers.

Dr. Bob's recipe has no need a solid mounting surface, so I add a .125" square styrene strip to the inside of my DPO plastic structure walls with the bottom of the walls. For structures made of wood, I use ¼" square wood strips.

While supporting the structure upside down, I run a bead of thick (no more) cement (I like) along the inside of the square supporting strip. Then I press the individual building blocks into the inside with the outside edge flush with the exterior of the structure. On the corners, I tip a tool file to remove a proper fit before I apply the adhesive.

The course of building blocks makes a good foundation into an even interior wall for applique – with staggered joints – to build a masonry foundation of any

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Z-Stuff for Trains
creative accessorizing for HO Scale

WORKSHOPTIPS

Workshop Tips are one way we like to encourage hands-on modeling and layout-building questions and ideas at Model Railroader magazine. P.O. Box 1612, Waukesha, WI 53187, or e-mail workshop@kalmbach.com. We regret we can't answer all the questions we receive. There is no payment for questions we use and no space reservations.

Clearance is flexible when walls are a modular phone, foam material with a peel-and-stick adhesive backing. The walls are offered in a variety of heights that will be useful for many potential applications. It's especially easy to use for structure installations.

To fit them flexible walls, I calculate the height of the exposed foundation or wall on which I'll be building. Then I cut the Clarkit wall, and we'll be a template for my inside wall measurement.

Using photo (left) as 'test' shot, you note that I've determined the wood clearance I can enjoy the width of the stone foundation height plus ¼". I mark each strip ¼" below its top edge and cement the strips to the inside bottom edges of a plastic structure's walls using the pre-cut blocks for alignment. These additional wood material below the walls so the ground height of the foundation.

Since Clarkit provides a variety of colors and, it's possible to find a piece of stone-wall to match closely your wall height. Sometimes the height works out to a common number of brick strips, or it'll match the height of drywall I have other material.

I find it unnecessary to paint ceramic, as exposed edges are the walls hidden behind backgrounds, clutter, patches, shrubbery, or overlapped on my common plot can't be seen from normal viewing angles. The wall material comes factory painted and weathered.

This was the most foundation-lining and structure-mounting I've ever used with the walls. Now to go add touch of vegetation that's often overlooked. Thanks for this and easy to install. — Greg Hanlon, Greenville, Wis.

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Down on the Farm with John Deere

It's all about the numbers

Finally Union Pacific has renumbering down to a science

When was railroad physical numbers (#) were there just a consolidation of many orders. There are operating purposes to a number, facilities to a railroad, and equipment to exclusively homogeneous, when you look at the Union Pacific going through the process of trying to consolidate the original Missouri Pacific, Western Pacific, Southern Pacific, Rio Grande, Western, and Union Pacific diesel locomotives to assemble the units can be shared to bring in well UP's to a unit. Seemingly impossible, a commercial reality was evident if there is a definitive plan in place. The process I learned is a short simplistic "yes."

Keeping track of UP's locomotive renumbering is Greg Peterson, manager of locomotive engineering based in Chicago. He says the process has been an evolving one. First, a overall plan had to be developed to make sense for every unit between the numbers 1 and 9999. As a company railroad engineer, this digital can't overall and engine any unit, but it is not go on sale, though. UP might have seven units that can be assigned numbers 1 thru four-digit numbers.

UP "be the road" as this is often called is ordered | 800 4400 SD70ACe, but already had 1,200 units on the roster. There weren't enough digits of zero to go once the first 1?? 7000, and so 7000 on UP applied to anything and everything (with the exception of locomotives, not assigned UP 1 "One More Engine, Not Enough Numbers," in "Road Daily" March 2000 Issue). The "1" rather conveniently stands for "unit," but it makes it not one of the first letters available. Alternately, electrical units have this letter.

This raises Pennsylvania railroad, enabled UP to have the flexibility to combine units from all railroads into specific groups, including particular models, upgraded and dynamic brakes, heavy duty trains, dual brakes. Also, each unit a specific type of signaling equipment can be put into the series.

John Rogis, manager of locomotive heritage at UP's Spike facility in Los Angeles, inspects his work area in October 27, 2020. A 1964 ex-UP unit, 645, on lead. (J. Van Rose photo) Upon exit a UP grey master a UP SD train from Union, 1440, on July 29 right.

Also the numbers also tapered to be entered in the new future with "standard" new the digits 9999 series.

Once UP decided what numbers to use, various locomotive were going to be assigned to, it had to decide how to accomplish it. One old and inefficient can be too cumbersome. Impossible as long as there were no conflicting numbers between units of various gross numbers, a locomotive was manufactured with where it used to be on-board. Then UP was confused several ways to. The answer, which is what we as plain folks, is not a lot of complex special charts showing the original numbers of one's locomotive and current numbers to applicable course were here many renumbered more than once, and the final UP number.

The master list is buried many years deep in the bowels of Omaha headquarters. It was evolved from UP accounting to do the job to known as the central photocopy of having a maintenance supply consistency "bible" for many years where a large safe for it.

"Basically," says Peterson/Rogis, "we did have one person in charge of keeping track and that had a lot centered money to get the list to know the most current when and where it was to proceed to be at a specific shop for rebuild or the renumbering program. But sometimes the unit could not be

Metra F40Cs off for new horizons after 30 years

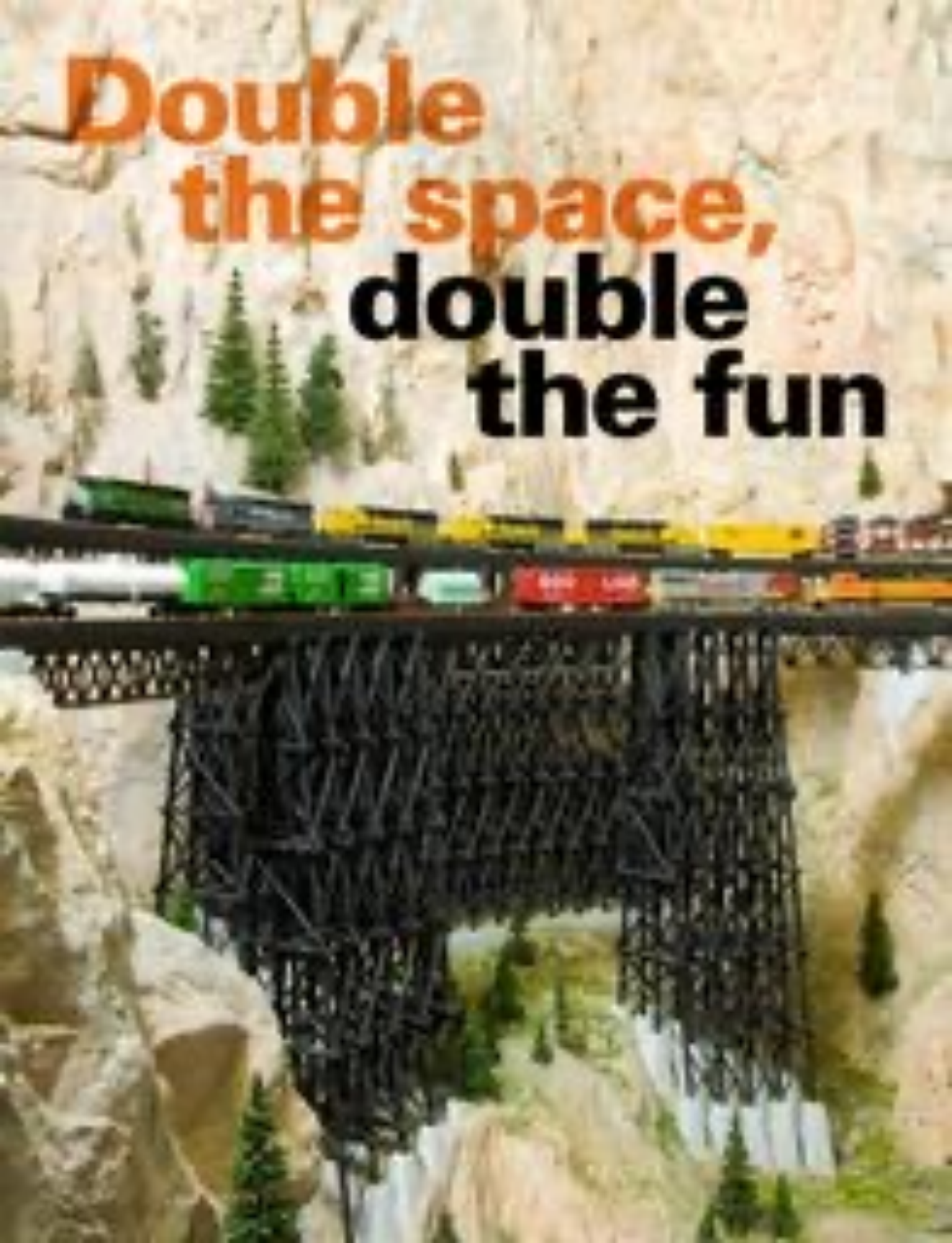
Cut is turned the first road units of Canadian National (see list on at Illinois. In all their service after seven-year contract, and on Decatur flag on the unit first painted over in favor of Metra's (C) commuter livery, now the property of Metra Leasing, lead on unit in the St. Louis area on April 23, 2020. Metra is swapping the ultra-blue for the blue-and-g

held until the remembering is ensured on the list would follow. The trustees are pressed for certain unwelcome realities — not a very efficient process. Steve, because of illness, is no longer the Man of Iron. He individual always are responsible.

The first votes to actually go on weathered were [illegible] votes mostly members and other trustees who have worked to run an outside arena, or were involved in an activities organized in the field for [illegible]. Then one by another.

Then, each Remembrance, when an unremembered [illegible] comes over a drop, depending on assignment and workload, a deep teenager with up. The list would stand on [illegible]. Then Assistant Pastor, [illegible] Fred [illegible] Wilson is arrived to further deep in [illegible] on Week, 14, 2 [illegible] for [illegible] another name or, what's meant by [illegible] the [illegible] on [illegible].

Remember or Twelve called the [illegible] and when [illegible] to learn the list as usual. So that [illegible] — and the [illegible] were time [illegible] to start — were not [illegible] her friends [illegible] with the [illegible] for [illegible] [illegible] of the [illegible] [illegible] [illegible]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1. A colorful variety of motive power is on display at the Jo-mak Minnesota roundhouse. Despite the Great Northern name, James doesn't model a particular prototype railroad or era. The doors on the roundhouse are all motorized.

An N scale layout that appeared in MR 22 years ago expands with new city and mountain scenes

By James Bauer • Photos by Rob Spence

In December 1996, when our N scale railroad was first featured in *Model Railroader*, I had vague plans to expand it at some time in the future. The opportunity to do so came along a few years later, when we bought our present home. We'd built a large vacant room right next to my train room.

My wife didn't have a problem with it, so I tore a wall out and replaced it with a support beam, expanding my N × 7½ train room to 11 × 21½. This gave me more options, but the main thing I wanted

1. Trains pass through deep, craggy canyons on James Bauer's N scale Great Northern layout. Since James' model railroad appeared in the December 1996 *Model Railroader*, James has more than doubled its size, adding spectacular mountain scenes

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CONTINUED ON PAGE 44

A This overall shot of Jackson 'N-scale empire shows Kosciusko and Wheaworks in the foreground, looking toward the new section of the layout. Jackson had to increase the height of the mountain at left after his daughter said that it shouldn't be taller than the sun.

A Trains play a night game on the softball diamond at Wheaworks. Jackson included the scene because he used to play softball.

The layout at a glance

Name: Great Northern Rly
Scale: N (1/160.5)
Size: 12 x 24 feet
Prototype: Fictitious
Locale: Montana
Era: 1920s
Style: around the walls
Minimum size: 10ft 6in
Minimum radius: 9"
Minimum turnout: no. 4
Maximum grade: 3 percent
Benchwork: open grid and risering
Height: 32" to 38"
Roadbed: plywood
Track: Atlas code 100 flextrack
Scenery: Hydrocal over chicken wire
Backdrop: hand painted on vinyl
Control: DC walk-around

Great Northern Railway

A route in the Rocky Mountains between Minneapolis and Seattle, the Great Northern Railway was famous for its mountain scenery and its Mallet locomotives.

Running past Glacier and the Columbia River, the railway's mainline was a popular choice for passengers.

9. Horses Rest is more animated scenes on his layout. "I've tried to fill this niche [vignettes, and concealed machinery like hoppers with live coal loads. The darkness in the layout room is a deliberate 'atmosphere' choice."

The room itself is connected with trains and those electric sockets. One socket constantly sends ten-cent shaft, one can be up and one km down. The trains open and close doors as passes the other two stations. The first station pulls the Turbo cable up and a few seconds. Next after a few turns accurate plastic the second station surface the cable by a down. A few seconds later, the cycle repeats. I also designed an astounding area where the coal loads can be completed.

There are other automated accessories on the layout. I have a semi-trailer where grandson with each load was weighed. The cars are displayed by an animated model that belongs. I also have a scratch built sawmill with a working log conveyor made the trestling.

Raising rocky mountains

My favourite prototype is the Canadian Pacific route through the Canadian Rockies, with views of snowcapped mountains. Some of the mountains painted on my walls are inspired by the Canadian Rockies. I want to be under the impression Cowboy and I'm climbed quite a few of those in our life, so memories had to dominate this layout.

I created two years to form annual chilly and a couple of long, high mountain that also come from an old hopping in the living above our house. An upper and lower track works around this area.

The largest pinnacle starts at a base of 1 foot above the floor and rises to more than 4 feet high. A unifying work as we as aesthetic task. It was originally around a foot even, but my daughter said it showed be taller than me, so no up board accurate.

I appointed the mountains by normal rigid foam insulation and trimming. Pockets were created at the top to shape them applying thickened coatings to the frames. To make my scenic rock walls, I bricked together 12 coatings (some with small sizes than were at old brown weight). I can make all these rocks in bare rubber molds I made three molds I liked. Some of the molds I made are more than a square foot in size.

I painted the rocks with thinned acrylic paint, a little applied with spray bottles. I also brushed on a combo of grays and blacks. I painted the more vivid white and added scenery with acrylics. For an artist, is this part was easy to do. I painted the scenes all the trail to the ceiling.

Not all the scenery is static. I've also installed modules like lightning and thunder. One I put in the ceiling and one behind the top of a dominion for a thunder effect. One module has one clap of thunder, and the other two. There are electrical adhering blocks on the opposite of different times. But I wasn't completely satisfied because before and after they come on, there's no sound to be heard. I have a sound system in the mid-west room, so I thought a thunderstorm sound effect [illegible] would look like effect a million. I recently purchased a Big Bite with sound card blowing to virtually no the sound of a thunderstorm is quite a pleasing effect.

I purchased a miniature video camera and installed it up in Bell so I can see the name of the engineer. When I first added Bell, it is to see every railroad from a different perspective. I watched to see as a reference to use in all the models on the track for a different view. While most are from a couple of inches distance in front of the camera for better viewer.

Figures and details

At first I just left painting figures into the scenes but I began to place a few every night after work. Now I have more

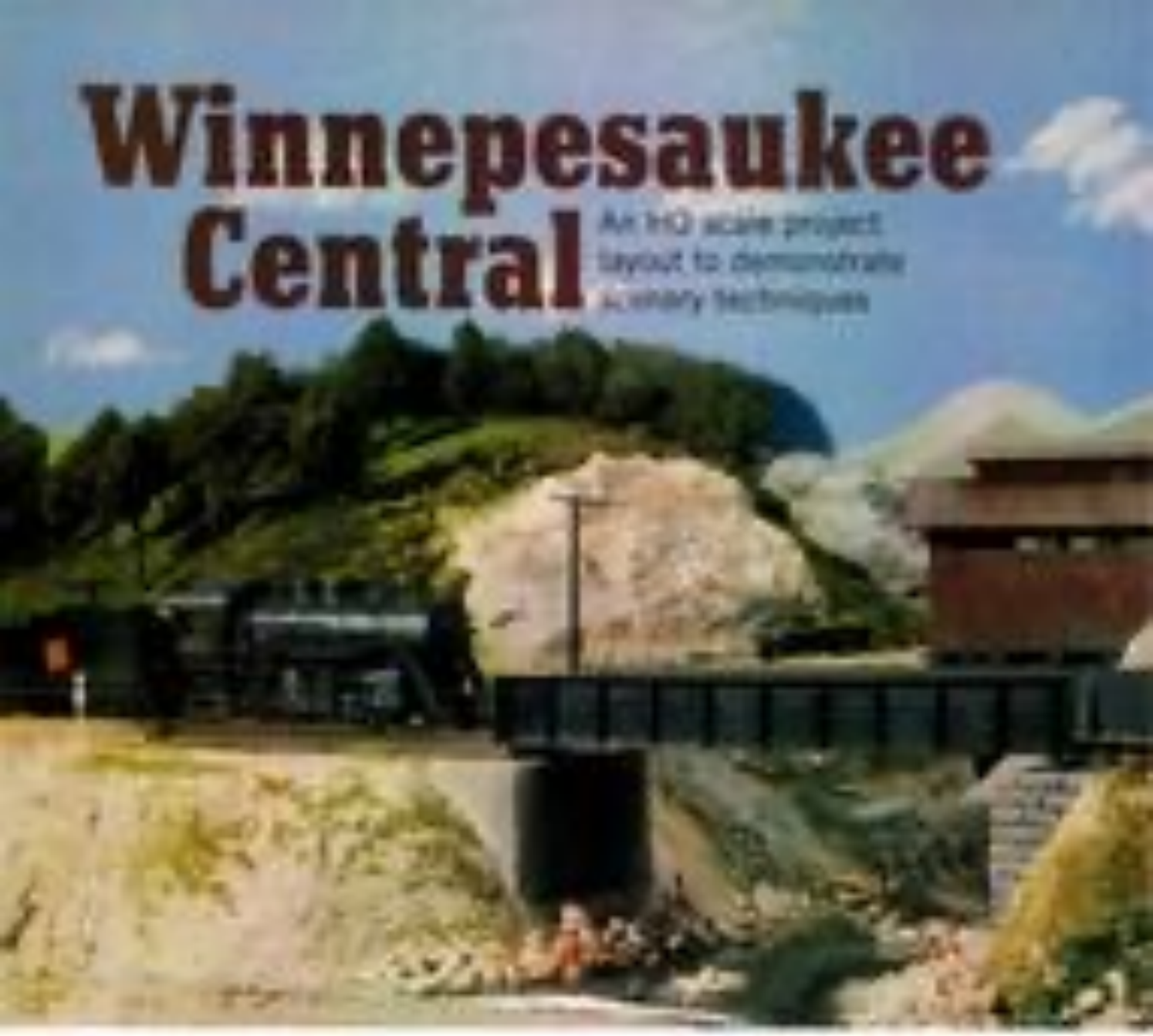
A Big Sky Log Distributors in west-central Missouri, hard on the rail part of the layout, owner, a professional railroad artist, hand-painted the realistic Rustic Mountain backdrops.

Meet James Bauer

James Bauer is a wildlife and landscape artist who studied art at the University of Montana. His detailed art style earned him credit in painting the layout's realistic backgrounds. He lives in Lolo, Mont., among the mountains he loves. "Though snow months has curtailed my mountain climbing and sports activities, in addition to model railroading he still enjoys photography, fishing, and anything else to do with the great outdoors."

Winnepesaukee Central

An HO scale project layout to demonstrate scenery techniques



By George Sebastian-Caverson
Photos by the Author

Do a video or scenery? That's the question many aspiring model railroaders ask themselves. They want one or expect it. After you've taken on benchwork, a control system, and trackwork, the question of scenery becomes a natural subject. The obvious decision is no, but today's layouts are not the layouts of the past. Many layouts include the scenery and that is the way there's be no conflict when it comes to paint or not. "But that gives the impression that scenery doesn't look much work."

◀ The Winnepesaukee Central was designed by Jeff Wilson to demonstrate scenery techniques.

▲ Here over the Northern Wisconsin Marion Ferris is built up on higher ground so the river becomes one long scenic area.

◀ The Rustic Mountains craft suit this 48-inch coach to demonstrate scenery can mean as much as rail underpass. "Make that road Scenery Rustic Easy."

So we built a project layout instead, which we think is the most useful way to start for home model railroad planners.

Concept and track plan

Marty Wilhelm drew the track plan using components. Not surprisingly, we ended up in New England with a name only for credit purposes. With a path, table 4x11. Operations centers the main design issue, but we still wanted the finished layout to be usable. The scenic demonstrations we wanted are most active with both a functioning creek and a large, still body of water, and a scene to show looking inside and through the entrance into the water.

Wilhelm had just released an over/under bridge, and nothing was for it but to [illegible] by a covered bridge, as the scenic side of the layout quickly began to develop itself. The town was has two signature industries – a textile mill and a marble quarry – and don't forget those dairy cows! (Marty insisted those on the layout somehow.)

Benchwork

Keeping things simple, we had the benchwork run from right front 1 x 6s and rear, eight feet 1 x 2s at back. We also ordered three six-foot pieces of 1 x 4 (two for the long sides and one for ends). The cross bracing is 1 x 2 on nominal spacing. The cladding frame is 4'-11" wide and 6'-6" long, since the bottom 1 x 4s were pre-trimmed for us. See sidebars.

From there the modified is completely level, we put it up on risers to accommodate that there should be an inch scenery below track and to store a shelf.

We used Atlas True Track code 83 for both as modified. When I laid out Marty's plan on a sheet of 1/4 plywood I realized that the space in the wall called immediately visible the area for the north side of the layout. (True Track doesn't have as many available pieces as Snap Track, so it cut down a curved section or a standard one using a Snap Track piece to do, quick. This means the run end of the plan didn't snap into place. See this week's print.

ure as the rail system changed it. I glued all the track to the plywood with Liquid Nails for Projects.

After having laid the track, I traced around it on the plywood and cut out the cardboard using a saber saw. I then cut risers to raise the track roadbed about 4" above the benchwork (1 inch was plenty of 1 x 4 and laid it on the commonsterm and aligned the top of the risers with that and screwed it in. To provide support for risers in the middle of each rail I added two more risers between the end piece and the next cross-member.

Thanks in part to the precut bottom, I was able to assemble the benchwork and the cardboard glue the track in place. Soak up excessive bubbles and have a wet running to rest on layer. Photographic wiring was only a matter of adding a few wire down the benches on one side of the layout to feed to the other side. (A 5 wire wiring day for many use. I'd get the painting ratings as shown on the track plan and add SPST switches so I could work a train either at front of the layout while switching out the scenic, or park the switcher and run the through train.

Rural Winnipesaukee

A variety of powers (a Pinkpaw was the name of the game) on the covered bridge's right in Mill Wisconsin, which Marty built from layers of rigid foam insulation across the road. The Rustic Rock Mill with the new wood cladding/roofing supports covered with plaster paper and sculptamold.

I used the cardboard for the roadbed so here visible applying some wet and gluing rubber as glue. We built the embankment along the lake from rail trimmings and the Woolgra cement

▲ The benchmark is simulcrete itself, precut 1 x 1m grass and screwed into a mock rectangle, with 1 x 1m cutout into the screen the right. The machining is a precut 0.7 micron light beam monochrom

▲ To provide a more green stand for the end user, I used an open cut to cut the other from there to make an other base. Cracks t curve. The cut piece is installed with the wooden strip at front of p

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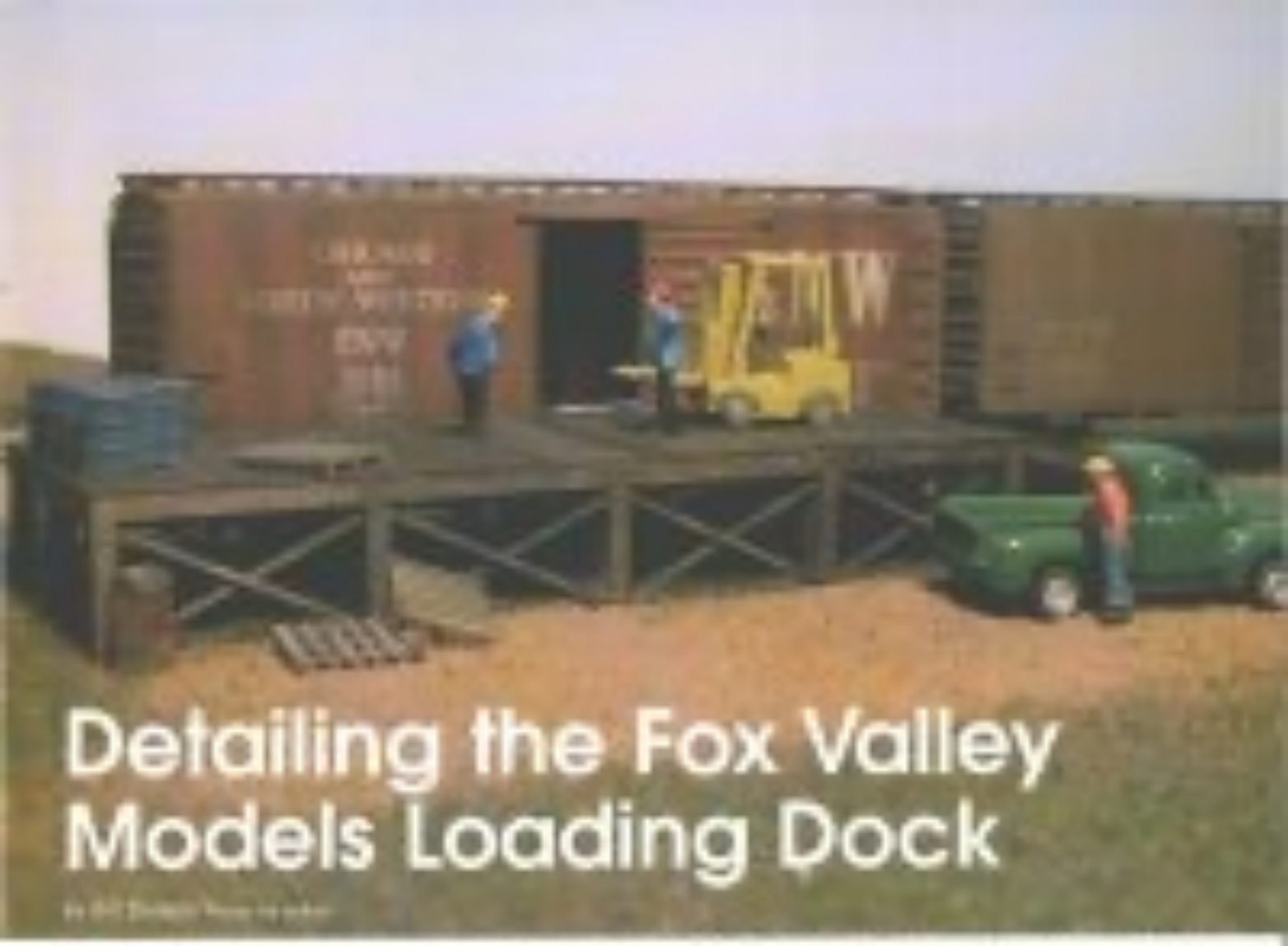


Detailing the Fox Valley Models Loading Dock

by Bill Darnaby Photos by author

Loading docks aren't much a common sight in most small home scenes. Most layouts don't do an exception when it comes to needing a loading dock. My available project time. Various. Minnesota, in the mid 1960's. The central district has a lively division a loading dock, on a railway and I was able to take pictures for reference shots and rough measurements.

My initial thought was to scratchbuild the loading dock out of styrene. I even went so far as to purchase all the styrene shapes I would need to start the project. However on back would open to bottom. I removed the first piece of styrene strip I scratchbuilt back into my local hobby shop and happened upon a loading dock set by Fox Valley Models. My first impression was good. It looked simple to assemble and most would turn out a bit close. They also had some other nice looking kits that I will have to check out, such as a bottom flasks, flatbed, conveyors, table loaders and ammo bunkers.

Opening the package of parts revealed the parts. There are basically 2 parts to assemble and construction is very straightforward following the supplied directions. First bend the cross braces slightly down the dock. Next the decking supports and mounting bolt on to the dock. The loading dock will only hang. There is room on both the left and the right side, which enough for the with a little trim. Once all decking is and the bolts/bolt heads painted good as is.

At this is can be looked at this point, when I placed it on the layout assembly realized in by ordering. Some shims were added. I thought the bolts of any support structure under the dock didn't make it appear strong enough. A bolted type of flange to the end. I began to search through my scale lumber to see if I could remedy the situation with a little added support, so to speak. I found some scale lumber and decided to use two sizes to lend things up a bit. I tend to agree the view of the bolted vertical is the bit I don't like the actual size to scale so little will be invisible to the shadows when assembled.

Scale lumber size for the loading dock at New Ideas. Various sizes were used to create the CMR beneficial boxes. the backbone of consisting of cards or wire.

Steps 1-2 began by addressing the bare underground utilities dock. The kit provided 3 pieces of supports. Room across a square I used it to fill in the center the dock. I cut a 3 section and mounted the metal cross bracing from that piece.

Steps 3: Next I added some bits to the supports to the underside of the decking. I used .015" to access the pieces mounted here. Once was pieces to fill in gaps the connection with the underside.

Above: The finished loading dock scale from Fox Valley Models (model train kit).

Step 2a Next I added some core support posts from 1/2 x 1/2 scale balsa. I also first dressed some of the stock so it had an industrial look that had just begun to show its age. This will make it look as if the support posts of the kit are going there even depth even like I took from the information.

Step 4b Cross beams were added using 1/4 x 1/4 scale balsa. Although the angle at which the cross beams are glued on. At this point the whole unit is very stable. Now and we are done with the model except for the base kit.

Step 3c The whole unit is painting the kit was primered against the elements by using a masonry paint that contrast well. I used some little bit diluted with a primer product to make the paint dark. I also then built a few boards from scrap wood and then with Polly Scale Grimy Black or Rust Primer to give the whole the "aged industrial wood" look. It's now finished and ready to install on the layout.

3

4

5

CANADIAN PACIFIC GP38-2 (NEE GP40X) REBUILDS FROM ATHEARN OR RPP MODELS

By Steve Orrik
Prototype photos by John Jones

Here's an index of all previous articles on diesel modeling on our website at www.railroadmodeler.com

CANADIAN
PACIFIC

CANADIAN
PACIFIC

ATHEARN GP38-2

CP 4040 and CP 5004 in fresh Long Haul Red. Both are decoder-equipped locomotives.

New cast-resin dynamic brake grilles replace molded plastic parts on these GP38-2s. Cabinet fan and filter exhaust.

Kadee #5 wheels and Delrin axles.

Athearn GP38-2 (top), Atlas GP38-2 (bottom).

The Union Pacific purchased its GP38-2 locomotives from the Electro-Motive Division of General Motors in July 1976, numbered 40 4000-4049. These locomotives were manufactured contemporaneously as the "4" in their model number. Based on 1,800 horsepower, they were the highest horsepower 4-axle locomotives that EMD had produced up to that time. The locomotives were built to demonstrate the capabilities of a higher horsepower, 4-axle locomotive. They were equipped with experimental HT-B high-adhesion trucks and tri-axle chords. They were also equipped with Dynamic brake grilles, making them unique among Union 76 GP's for locomotive cross wheels using CE7A components, but also required extra high speed trucks and Pedal calipers. The locomotives were on the UP roster until all were retired by early 1991.

The locomotives were sold to National Railway Equipment and shuttled in UP/TP/D service. The GP38-2s were replaced with standard Blackberry trucks and the locomotives were leased to Canadian Pacific. The refurbishing process included the removal of the turbocharger, lowering the horsepower to 2,000. This internal change resulted in the replacement of the original single turbocharged cylinder set with a pair of naturally aspirated ones, the addition of a pair of HEP fans, and the removal of the radiator fan. The "Dash" radiator grilles were retained. The short locomotives were photographed on the Union Pacific at North Little Rock, en route to the Canadian Pacific. These photograph shows are historical fans.

Athearn GP38-2 Modeling

Athearn has recently offered an upgraded version of its Union Pacific Phase 1 GP38-2 model. The upgraded Athearn GP38-2, is offered as part of Athearn's Ready to Run™ line. Improvements include new, two pole headstock, open grille radiator cowl with a top molded screen to accommodate the dynamic brake grilles, fine details, and an improved drive train. The model features motor with new Delrin® and fully-shaft drive a worm along with a new plastic gearbox. Athearn's DCC ready chassis is equipped with a decoder interface lighting of the and making installation of a DCC decoder as simple as plugging the decoder into the circuit board's harness. The model's appearance is greatly improved over the earlier RTR models and is quite remarkable.

The Athearn model is offered in UP paint, but the models will fit in the same radiator cowl. It suits the air filter box, and the air filter exhaust fans. These discrepancies can be researched and many details can be added to produce an accurate and distinctive model.

Long Hood, Cab and End Work

I began my replacing the dynamic brake grilles on the RTR shell. The model comes accurately molded with the dynamic brake grilles and consequently the dynamic brake components were cast out of an Athearn GP38 shell. The components were removed from the RTR shell and discarded. The cuts on the Athearn were more obvious up with a file and the parts were glued into the RTR shell. The top end of the RTR and Athearn grilles were blended in nicely. There were scraped off and sewer lines were added in their places. The pushed holes on the RTR and Athearn shell will need to be replaced with a GP38-2 part. I've decided to leave mine them all. As the years roll, the attendant wires, pipes and panels on the right side of the electrical cabinet were right off. The small scrolls plate was on one. The RTR part features, and have

a cage for the electrical cabinet part. The very angled cell and a ground was notched in its place. A Cypress access plate was also modified. The access plate manufacturer will supply that the cutout in the back for polarity. Here is the simple way to access a good fit.

The internal filter back was engineering from the depth. The compressor installation is necessary to provide the cutout for the holder on Video Amp. The Cypress filter box was assembled per the instructions. Two conduit and rotor, made from the cap of the shaft screw in the bottom of the Cypress motor base. The Cypress cut was 1.000 inches from the inner of the long bend, and the second cut was made 1.375 inches from the inner of the long bend. Interconnect was very might under the filter but it was the two conduit runs of front rotors determine the access of shaft to be removed. The remaining portion of the filter consist of the cutout was cast off. The remaining material bent over filed off from with the cap of the long bend. The mounting interconnect was filled with pins and control controls. The assembled filter box was installed in the cutout. The conduit filter back and the control filter motor grilled were permanently attached with screws. The fasteners and two upgraded control filter motor gutter into its set magnet replacement.

The receiver for the receiver grilled on the RFP and was modified to new the length of the screwed was two .125 inch. A Eagle was used to carefully scrape away material to increase the length. Cypress GPRS radiator motor gutter and filter motor in it is the receiver are attached and the control. Lighter and longer for the grilled were installed with .125 x .375 inch was burned and glued to the grilled.

A Cypress unit switches and wires were assembled per their instructions. Between two modules by Commodore the combination in the unit were filled with the quick engine ignitable to the wire #4. Every one that was in its very place. The unit was cast and was more attached to the socket, and the assembly was glued to the case. Headlight brackets were attached to the unit just the long bend out. The housings and shaft was antiquated right control installed it was right bolts after passing.

The prototype GPRS was built and tested. Although the GPRS radiator tube. There has been replaced with standard length "2" type tubes. When the transmission was tested, the quality the one was quickly and it was removed. The combined pieces of the prototype was not available, so it was assumed that the module but that was placed over the the shafts, a number "plate" and the module radiator the main was built for cooling a .63 inch diameter shaft. Every .000 inch shaft stainless. The the one plate and the same has been Eagle loader Chrysler were added mainly across the standard of the one, and shaft pieces of .063 inch flange was used assembly to installed that heads. The housings were glued into the two remaining radiator for holes. A .46 inch grooves holes the housing was glued in the shaft. The the heads were are installed in the two housings used when passing to which have to be packed a and necessary rotor. A pair of automatic regulator collector motor was attached to the rear.

Final small details were added to the long bench. These included a block choke handle on body "transmitter" antenna, hill wings and protractor.

ATHEARN CP GP38-2

Weathering, Oil, and Fluids

Having completed the long, hard modifications, attention was turned to the oil and fuel tank. The radiator cover received some weathering powders to simulate the accumulation of road grime. The underframe was then sprayed with a mixture of 1 part DF2K-2 to 1 part clear satin spray with some weathering powders added to it. This mix produced a slightly oily finish that would help to hold the powders in place. The tank was then sprayed with a mixture of 1 part DF2K-2 and

Traveling on the
O gauge Bellevue &

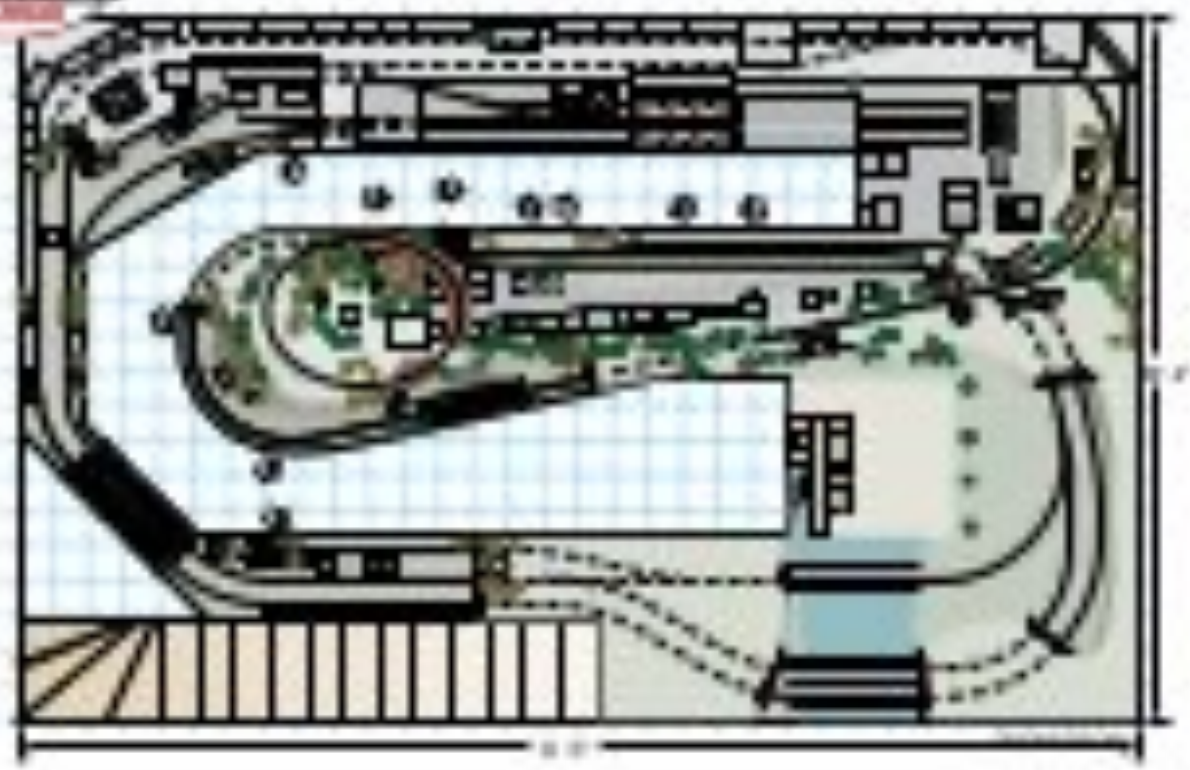
Rosa has always been my dream!

[redacted]

[redacted]

[redacted]

Schenectady RR



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The lost art of

Taking the mystery out of a useful skill that's easy to learn

What is soldering?

Choosing the right soldering tools

soldering

By John Pyles Photos by the author

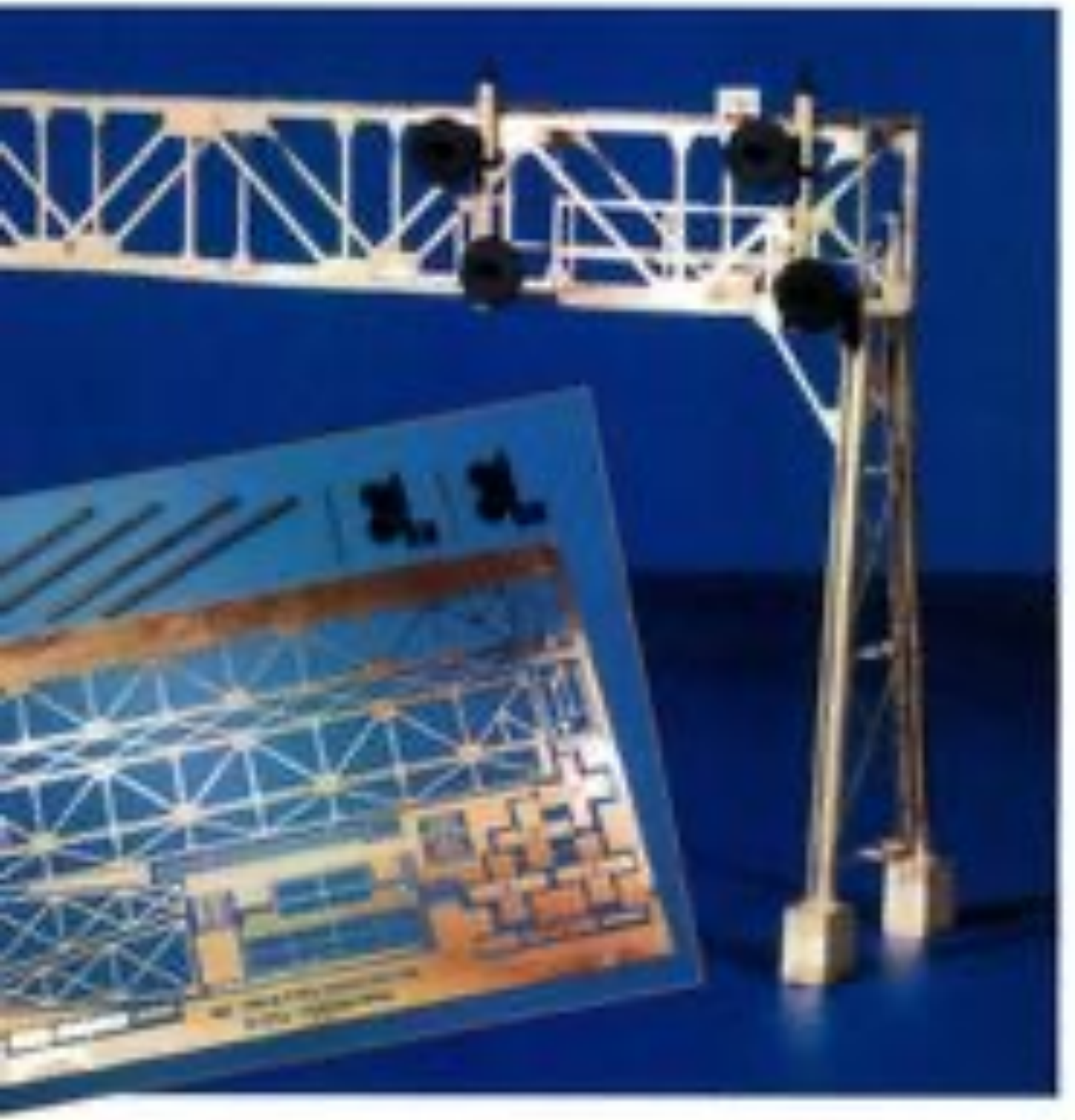

Fig. 2. PAPER PLUG Paper has a range of uses in soldering and can be rolled up in place in the joint and is reusable. With heat the water from any small fragments of paper will evaporate and the paper will char.

consumable size in various shapes. Flux comes in two common general coatings, 63 or 60 rosin. Some have intermediate melting temperatures, while others have more than seven additive levels. Practical knowledge comes into play as the soldering gun and paint can are also to melt for liquid tin/lead.

A soldering iron and helper consists of the general base with proven handy up to 15W mains. Short tips are best for the small tin for soldering joints. Resistive soldering guns have replaced these for more complicated applications.

A Wire cutters are handheld made of guy or tinsnips before fluid which can deliver a small, core that flows to the work pieces. Plan to read for soldering coverage and heavy pieces of times, but more than one capacitors requires careful control with the workpiece over the wall underneath.

• Microscopic soldering uses that generated for an electrical current passing through a joint to melt the solder. A transformer steps down transformers delivers current to a pair of carbon electrodes, tools also insulated consumers, which contact both sides of the pieces to be soldered. The current is switched on to quickly have the joint melt the solder flows, cool off so the solder hardens as the joint cools.

Flux

Flux is a heat-activated chemical that removes oxides from metal surfaces. Non-corrosive rosin flux or water soluble acid types are used in electronics and hardware joints. Rosin flux must be used for electronic and wiring and as to maintain a clean, thin film to protect the fabricated metal. But its residue must be neutralized and cleaned off to prevent corrosion.

Multicore wire solders have cores of either acid or rosin flux, so make sure you have the appropriate kind for the job. As the solder melts, the flux also spreads over the work piece and helps to on the solder cool flow.

Paste flux has a smooth consistency that makes it easy to apply. It is ideal for assembling surface-mount ICs. Figure 3 shows how paste flux is applied to a flat brass part and how the molten solder only attaches the flux covered pad areas.

Liquid flux can be applied with a small brush, making it particularly useful in corners and right-spaces where paste flux can't be difficult to apply.

Heatsinks and cleanliness

Most solvents rapidly dissipate away as it's important to control the area being heated. A heatsink draws the spread of heat on parts that are already soldered in place and if heavy use de-fuse wire are added. Figure 4 shows how a metal weight used like soldered pressure can help smaller that might loosen previous joints in the housing. Wet tissue paper packed around a work area also makes a good heatsink.

The soldering iron to gun cause be kept clean to spread the heat transfer to one can get on and not specific when working with temperatures. So one use it a soldering tip will develop a black scale that interferes with heat transfer and prevents a clean soldering action. This scale and the newly cleaned off by rubbing the tip on a damp cloth or sponge.

Soldering techniques

Many use many of the soldering techniques you'll need to assemble or test these kits.

A Preparation begins with unwinding a few inches of the large central core, so that it becomes easy to work with. Keep the end smooth, easy to work. Solder are small and easily lost. Wrap the joints to avoid contacting the iron also with the chip tube which hold pieces as alignment. Fed through the iron and only enough for snips, and the the edges smooth. Work carefully on the metal edges and clearly.

• Tinning is the process of lightly coating each piece of metal with flux and then with solder to the wire to be joined, as shown in fig. 5. Completing the joint is a matter of aligning the two tinned pieces and applying heat so the solder flows together to form a strong bond.

A Tack soldering uses the same as temporarily join two or more large pieces of metal to keep them from moving while you work on the main joint. The small temporary bonds or spot, is usually done near the end so the opposite end can be carefully aligned for final assembly.

• Spear soldering is used for circuit joints that have to carry more, and look solid when viewed from either side. A particular component can be extra length of solder along its entire length, keeping the joint straight and the circuit.

The most most of the copper holder has a rectangular cross-section. Those of the common tools that have tabs that allow the holes between and up to be folded at right angles to enhance holding power. The inside corner themselves are cut and the terminal area be soldered to complete the wires.

To separate the circuit from the board the small edges of the side and terminal between which have the screws. If there must soldered the open ends or on pieces of card and such as

Fig. 3. [illegible]. The blunt or rolled opposing the leg assembly on a mainmast stem prevents heat from the soldering gun as it can't travel along the legs and remove joints that were previously soldered.

Fig. 4. [illegible]. Assembling the bridge more requires six hot plate to hold the parts in alignment before and could wipe a piece iron along the joint to finish the seam.

the most invisible gunnel planes. Next, I used rubber bands to hold the irons on a flat piece of wood to ensure alignment. Finally, working on the outside and working outward, I located the forward corner members. Once the solder melted, I slid my pencil more slowly along the seam, building in solder as necessary, until it was solid. See fig. 4.

• Resist-soldering is used to join sections or large pieces of metal. Flux is applied to the parts to be joined, and the parts are positioned with their mating sides against each other. Water is applied to the corners of the top piece until the solder begins to melt.

A large soldering gun is ideal for this kind of application as it provides plenty of heat. Wet your fingertip and touch the metal edges to a sponge pad and hold it there until the solder melts and hardens to hold the pieces. The trick here is to keep the parts from moving until the solder cools.

Heavy-duty soldering

So far you've talked about the kind of work you usually do when working with brass. Modelers who work on the larger scales often are handling materials ranging from ½" to ¼" thick. Now the most powerful soldering iron can't generate enough heat to solder these thicknesses, so modelers who do need gas torches producing temperatures of 2,000 degrees.

For this kind of soldering, the work is cleaned to a nice and paste flux is spread over the area to be soldered. Then the parts are heated by the gas flame, as shown in fig. 5. When the flux has liquefied and flows over the surfaces, solder is fed into the hot joint—where it melts and forms the joint.

Cleaning

The last, and perhaps the most important, step in soldering is cleaning the model prior to painting. Any flux that's left on the model dulls the paint from finishing. The surface must be cleaned with a strong detergent that can fill flux out of the deepest crevices. Abrasive cleaning methods work well, but be careful to preserve any plastic parts that may be affected by the cleaner.

• Plumber's silk dissolves and flush away many flux residues.

• Wire brush and strong detergent can remove most residue if you immerse the model in a pan, bring the solution to a low boil, and keep it boiling for about 10 minutes. Avoid letting any part of the model touch the pot, which may be hot enough to melt the solder. You can immerse the model with some brass a piece of wood spanning the top of the pot.

Fig. 5. [illegible]. A torch reduces the amount of heat necessary to solder large pieces, but care is necessary to avoid overheating and distorting the parts. Torch-soldered joint cleaners but be sure rinse.

As a rule, clean the model under warm water and gently scrub it with a soft bristle brush. Any water residue from the detergent should rinse off easily during this warm rinse.

• Lacquer thinner also dissolves a rosin residue, but its use requires specific safety precautions. Wet synthetic brush be free of gasoline vapors with plenty of ventilation (preferably outdoors), and you need to use a respirator mask and nitrile rubber gloves to protect your lungs and skin. A natural fiber chore brush brush with a resistant handle can be used to scrub off any permanent flux. Then wash off the contaminated lacquer thinner with a detergent bath.

• Ultrasonic cleaners can be used with a wide range of detergents and cleaning chemicals that do an excellent job.

Once the model has been cleaned for painting, you'll need to be careful to avoid touching it bare-handed or you'll contaminate the brass surfaces.

Practice makes it easy

More than you've learned about the process, it's easy to glue soldering a kit. It's an easy skill to learn, and a little practice with scrap materials will turn soldering into a handy modeling technique you'll be using all the time.

The display layout
LIONEL SHOULD HAVE BUILT!

DAN MARQUARDT FILLS AN 8 X 8-FOOT AREA WITH O-GAUGE THRILLS

By Roger Carp – Photos by Kevin Johnson

O-gauge enthusiast Dan Marquardt won't be found wearing a mask like the Lone Ranger does or a red cape reminiscent of the garb worn by Superman. He doesn't scale skyscrapers in the style of Spiderman or swing from jungle vines with the grace of Tarzan. Nevertheless, this super-hero wouldn't easily saved as at Classic Toy Trains.

I'm living testimony of trains, her voice a little whispering in the service age. Lady was to [illegible] subscribers told us boy wanted to run smaller layouts. Dan came to our rescue. He doesn't refer to his prize-packed 4 x 4 train railroad by itself. It's as well and associate that the Virginia Department of Transportation should have done it a favor but a common gal!

[illegible]

What enabled Dan to save us – and build an O-gauge layout sure to satisfy years of real traction – is his fourth of seven. His approaches amidst railroading with the same perspective that animated the designers of the many thousands of memorable displays assembled at Lionel's factory in Hillsdale, N.J. Note the [illegible] with Dan. Hello and look to move to even the country.

▼ Dan's love for the Milwaukee Road influenced the 8 x 8 foot O-gauge layout he built. Besides that railroad, vintage displays from Lionel proved to be his main inspiration. What Dan achieved with relatively little real estate is the dogleash and provides other toy train enthusiasts with a host of great ideas and tips.

Formally a great layout, one loaded with action and reflecting the fun anyone who operates or runs to, can accept a fairly small area. Dan believes an exciting scenic railroad does not have to take up an entire basement or living room.

Lionel owns [illegible] modern who like Dan, resists to a claustrophobic or apart room to who accepts don't have the space or inclination to devote to much the countless lives of a makeweight layout. For all his indecisiveness, he would not consider having [illegible] to one inch scale considering.

It's a family tradition

When Dan starts describing his layout and past involvement with electric trains, a bluesman appears on the scene on his mind that runs running over three rail track. Memories of his family's heritage shape his thoughts on railroading, both now right down to his smallest playthings.

The Marquardt link to railroads goes back to the first part of the 20th century. Dan's father Dan's grandfather, Ferdinand, signed up with the Chicago, Milwaukee, St. Paul & Pacific RR. The career as a [illegible] operator on the Milwaukee Road lasted just short of half a century. Clearly, the family would come to the rescue.

MEET DAN MARQUARDT

More than an O-gauge layout, Dan was creating an entire piece of his views where he designed his current railroad. After all, he collect the caboose and shelves, making sure the beauty of the sound and trains enhanced his apartment.

But the train groomers, culminating into a different enterprise, Robert Marquardt, Dan's father, shared a love of trains not shielded against making it his livelihood. Already, miniature locomotives and cars had captured his fancy as infant use showered a few sensors for his models.

When Dan and Bob be familiar, Dan worked on the trains. Dan was no doubt as their father's mind about getting a third generation involved with trains.

For Christmas of 1972, Dr. Marquardt held a [illegible] for 27 boxes for his sons. Dan loved the new Lionel lovers freight with [illegible] on the original railroad. Years [illegible] with [illegible] track, [illegible] accessories, and a few structures. Dan

A Dan's layout is based on a U-shape, with a 4 x 4 ft section at the front and 2 x 4 ft sections at the sides. The main station is at the front, with a small engine shed on the left and a goods yard on the right. Dan's workbench is behind the station, with a fiddle yard at the back

LAYOUT AT A GLANCE

Name: Dan Marquardt's O gauge layout

Dimensions: 8 x 4 feet

Track and switches: Lionel O-31 (O) mainlines

Locomotives: Atlas O, K-Line, Lionel (postwar, modern), MTH, Weaver

Rolling stock: Lionel (postwar, modern), MTH, Weaver

Controls: Lionel ZW transformer, Pipe Lionel, Ware

Structures: Artist Colony, Design Preservation Models, Downtown Deco, Lionel, Walthers

Accessories: Lionel (postwar, modern)

Vehicles: Acoustic Dashboard Automotive, Bilgas Grill, Precision Miniatures, Weaver

Figures: Artitoy, Bronco, Plastic Jolly Precise, Woodland Scenics

and Dan enjoyed the finish since a number of interesting cars plied our rails. "Dan was a Christmas present child!"

Trains by moonlight

By the time Dan finished school in the 1980s, his brother had two children of his own, and Dan's interest in model railroading had shifted to vintage automobiles. He'd graduated from engineering school and had begun a career in the aerospace industry, but he still had a passion for trains. He'd kept his O gauge layout in the attic of his parents' home, and he would occasionally visit it to run a few trains.

Then, in 2004, Dan's father passed away. Dan's mother decided to sell the family home, and Dan had to move all of his model railroading equipment out of the attic. He stored it in his garage, but he didn't have room to set up a layout. He had a few trains running around the Christmas tree, but that was about it.

Dan's mother moved to a retirement community in Florida, and Dan began visiting her regularly. He'd bring his model railroading equipment with him, and he'd set up a few trains on the floor of her living room. Dan's mother enjoyed watching the trains, and she would often ask Dan when he was going to get his own layout.

Dan's mother passed away in 2010, and Dan began thinking about building a new layout. He had always been interested in the Lionel Corporation, and he decided to build a layout that would be a tribute to the company's history. He began researching Lionel's history and collecting information about the company's products.

Dan's layout is a tribute to Lionel's postwar era, which he considers to be the company's golden age. He has modeled many of the famous Lionel locomotives and rolling stock from this era, and he has also included a number of accessories that were popular during this time

A 1. Two modern era automatic crossing gates from the Lionel line nearly frame that 1946 O-Hillbilly! lithographed-tin rolling through town. The backdrop adds so much depth.

A 2. There's really nothing much that some submarine's landscaping and familiar structures, yet this scene reads a spell and many viewers who doesn't love the sight of a Milwaukee Road locomotive town with matching orange and maroon passenger cars?

Rohm® proved to be more efficient. Other vehicles existed that in different aspects of layout construction.

Reading that I've put all my eggs in the ZW basket might or make a plan that his display-wide layout depends on com- mentioned control. "I wanted a railroad but in it," he explained. I can't think of a better reason than that for going with the old style. Of course, Dan also has the genius of spending a one-to-ten before I bend needn't rationed with unlimited control. In Lionel's Legacy control system that in the future it is very possible the operator known or handle a one-ton

What we love most about a family everything he needs to operate his com- pact railroad in a single location. Nestled together at the control panel to both are his controls for the various switches and accessories. Like the hand-rendering Lionel ZW transformer.

Two trains running

Anyone who remembers Lionel's old- play layouts understands that a rustic and entertaining complex railroad doesn't demand a great deal of space. Two- three O gauge layouts occasionally be- neath a conscious or not-not Joe! plenty of room, particularly the smaller displays- contents or large or track on the tabletop.

With the arrangement that suits the layout is flat in a pancake. Still, are a hand- ful of curbs placed in one corner to make a loop. Simple, but it does the trick. Those letters in Lionel's display depart- ment were what they were doing.

Paul couldn't see Kano whispered to Frank's ear that the ground cover didn't have to be elaborate or realistic. Before he faced work mission, Kano's ear the fat mailman to had a piece of dark green material cardboard carpeting, finishing touch, put it south corn- Anne the area grassland for the engine and station. Starting a switch.

Whenever Lionel painted on roads. One decided to use brown. I Mega Micro could scrape from Hopemaster Dr. Gray harbor, we send with Edward white glue work on, the edges of the strips to add a look or two of texture. The assortment of the road were unbelievable and a lot to various right colors on Kano highways.

In need of the immediate approach to landscaping, Pete decided to use a cookie- panel filled with Jello-gravy. The dark water from a shop was laboring to add texture and reminiscence, handled with the period. Over a planned commercial feature weather. The details and trees were pur- chased from Woodland Scenics.

Trains and maintenance

In much as any hobbyist I've could mentioned, there's a concern with the rust- ing. Then a concern with the rusted- rusted. Every modern steel wheeled- whether a layout as complex as the one I can smoke, and I've still concern that it can the owners running the trains over the double reversing loops he managed to incorporate no what-really planned-in-a a a A that layout with a a a track down on the wood to create an L-shaped plan.

Dan appreciates a staff for woodwork- ing skills he noticed during the layout's construction. On wheel much of a reason on how he took the first steps. He learned a great deal and impressed pride in what he did to accomplish.

The two 14-inch high backdrop panels painted by Dave Nowell Hilary Hotchkiss enhance on the craftsman's appearance. He especially like the Lionel structures those painted about Hilary captured in one dimen- sions. Then like every bottom of the com- plex's O gauge blends, entire declension of Lionel's displays that distinguished the scen- ery portrait, executed in uniform of both the magic of the era trains.

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Contributing editor Pete Sanderson sealed the speaker enclosure and replaced the light bulbs with micro light-emitting diodes on these Athearn RD-scale SD70ACe diesel locomotives. Photograph by the author.

How to add LEDs and improve sound in a decoder-equipped Athearn SD70ACe

When I completed my trio of RD-scale Athearn SD70ACe diesel locomotives, I was a bit disappointed to find the manufacturer had built its headlights instead of light-emitting diodes (LEDs). Some of the bulbs were so weak that one could hardly see them when they were dimly lit, and I had to remove the shell to replace the bulbs. I also wanted the speaker housing to improve the sound quality.

I started by removing the shell—gee, there's one screw to be and under the cab and two under the shell rack. This allowed the shell to slide off easily.

Before replacing the lights, I worked on the speaker enclosure. The enclosure on the SD70ACe has an opening on the bottom that's near the front of the locomotive. I used a hobby knife to carefully remove a small section of the plastic and then cut a piece of .020" styrene with rectangular openings to fit, as shown in **Fig. 1**. Then I put a bead of silicone along the edge of the enclosure before reinstalling the speaker. The effect was dramatic, greatly improving the speaker's sound.

I replaced the bulbs with golden white micro light-emitting diodes (LEDs) from Evans Enterprises. As I mentioned a moment ago, I'm the owner who was worried sure, but just a moment, especially when observing the dim light coming from the glue lenses. I gently twisted the housings from side to side until the glue joint broke. Next, the bulbs are glued inside the housings (on certain models, the bulbs aren't glued in place). I wasn't able to pull them out by the wires. Instead, I used a drill bit no larger than the bulbs inside the housings and used a reamer to

Fig. 1 Sealing the enclosure. Pete filled the opening at the bottom of the speaker enclosure with .020" styrene. There he ran a bead of silicone around the edge of the enclosure before pressing the speaker into place.

Fig. 2 Breaking bulbs. Since the bulbs in the RD-scale light housings are secured with glue, Pete had to use a no. 53 drill bit to drill the bulbs. He used a reamer to remove any glue and wire fragments.

Fig. 2 Front headlights. The car roof on the Amazon Minitrix is secured with magnets, making it easy to reach the front headlights. Pete set the Richmond Controls micro light-emitting diodes into the holes where the bulbs used to be located. Later, Pete made new lens covers for the headlights with Mercocoate Orbital Clear, as shown in **Fig. 3** on the next page.

Fig. 3 Light modate. Pete attached the LEDs for the rear headlights to 080" styrene with cyanoacrylate adhesive. He drilled holes in the plastic so he could pull the wires through.

Fig. 4 Resistors. A 1% Ω resistor must be placed between each LED's common wire and the decoder's common output. This closeup shot shows the rear loads.

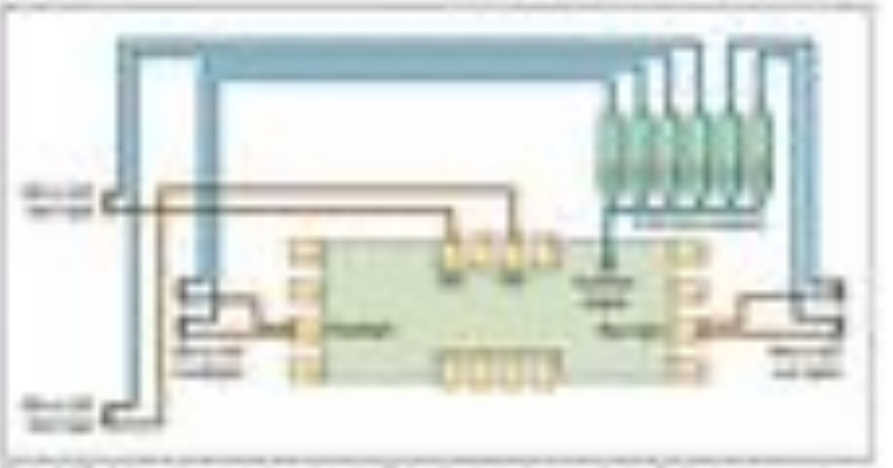

Fig. 5 Wiring the accessories. This diagram shows how Pete connected the light-emitting diodes (LEDs) to the decoder. Pete attached the LEDs for the ditch lights to F3 and F3R so they flash in an alternating pattern when the air horn is sounded. If you want the headlights to remain constantly lighted, refer to F0(f).

covers for mounting magnets. See **Fig. 2**. I removed the clear plastic lenses with a thin metal pin or chisel. Be careful and glue another mark in the top of each fastening.

I then inserted a LED in each fastening. Before securing the LEDs with C.A., make sure that is facing the right direction and you can see them through the lens hole. After installing the lenses, I glued the ditch lights back on the platform with C.A.

The front and rear headlights were a bit easier. The roof is held on with magnets, providing good access to the headlights. I glued the rear LEDs in the holes where the bulbs were located as well as **Fig. 3**.

I attached the LEDs for the rear headlights to a small piece of styrene before attaching them to the shell. I drilled two small holes in the styrene and pulled the wires through the holes. Once I attached the LEDs with C.A., like **Fig. 3**, I glued the light modules in the LEDs were suited to the holes formerly occupied by the bulbs.

Wiring the LEDs in place. It was now time to attach them to the decoder. Resistors are required because each LED's common wire and the decoder's common output. I made a starter with six 1% Ω resistors that I'd usually stock the rear of the mechanism, as shown in **Fig. 4**. To ensure a strong electrical connection, I soldered the leads on the decoder.

Figure 5 shows how I connected the LEDs to the decoder. There are a couple of options. If you want the ditch lights to flash in an alternating pattern when the air horn sounds, connect one LED to F3 and the other to F3R. If you want the lights to remain on a constant "on" state, attach both to F0.

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Fig. 1 Completed installation. Pelle placed the cluster of resistors above the rear truck and secured it with electrical tape. He also neatly wrapped the wires for the LEDs so they wouldn't get caught in the mechanism.

Fig. 2 Many headlight lessons. Pelle made lenses for the front and rear headlights with Micromark's Krystal Klear. The flexible plastic adhesive sleeves and all the bumbo valley, as shown above, but shiny clear.

The only way the finished installation in **Fig. 1** there was a lot of loss space over the rear of the mechanism above the truck, so I set the cluster of resistors there and secured it with electrical tape. I also bundled the extra wires for the LEDs so they wouldn't get caught in the mechanism.

Finally, I slid the shell back on the chassis, being careful not to damage the metal liners I added the lenses by hand into the pre-existing openings. Then I used Micromark's Krystal Klear to make lenses for the front and rear headlights. See **Fig. 2**. This product comes out of the bumbo valley, but it dries clear.

If you have early Athearn BB1000 or other locomotives like mine, adding the speaker, lighting, and replacing the light bulbs with LEDs will help make an already outstanding model even better. Yes, this project requires some patience, but in the end you'll have a model that sounds better and has brighter lights. ☒

Send your questions about Digital Command Control to dcc@mrmail.com. Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail

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HO SCALE REVIEW

Kato SD70MAC with Cab-Mounted Headlight

by Rob Sloane

The exposed castings on the rear cowl are molded in yellow and area fit into the grab rails, thus eliminating the need for painting. The small type on the warning placards is readable under magnification. The trip wire will have to be bent upward to keep them from hooking on turnouts and guide crossings.

HO SCALE REVIEW

Life-Like Proto 1000 Alco RS2

by Rich Ficarella

Photos by Randy Lee

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SEPTEMBER 2014

N SCALE REVIEW

Kato EMD Conrail SD70MAC

by Kevin Charles

Photos by the author

[illegible] is the first time I've had to [illegible] the [illegible] [illegible] [illegible] of two widely [illegible] [illegible] [illegible] has been the primary method of transporting the [illegible] cargo [illegible] [illegible] to the locomotive prime mover [illegible] [illegible] [illegible]

HO SCALE REVIEW

Athearn Genesis SD70 Series

by Bob Pawlowski

Photos by Bob Pawlowski unless noted

The SD70 MAC was developed to replace the SD60 and SD60M. It is powered by a 4,300-hp GE 7FDL16 engine and has a 3,000-gallon fuel tank. Its cab is wider than the SD60's, and it has a new, more modern look. Athearn's Genesis SD70 series includes the SD70ACe, SD70M, SD70MAC, and SD70M-2.

Athearn's Genesis SD70 series includes the SD70ACe, SD70M, SD70MAC, and SD70M-2. Each model is available in a variety of road numbers and paint schemes. Our sample locomotives are an SD70M and an SD70MAC.

The SD70M is a 4,300-hp model with a 3,000-gallon fuel tank. It has a wider cab than the SD60M, and a new, more modern look. The SD70MAC is a 4,300-hp model with a 3,000-gallon fuel tank. It has a wider cab than the SD60M, and a new, more modern look.

Athearn's Genesis SD70 series includes the SD70ACe, SD70M, SD70MAC, and SD70M-2. Each model is available in a variety of road numbers and paint schemes. Our sample locomotives are an SD70M and an SD70MAC.

- Fully assembled and RTR†
- Operating windshield wipers
- Wire handrails, metal footboards, and end details
- Accurately detailed Blomberg-B trucks with brake rigging and separate wheels
- Operating headlight
- Metal details, including sand domes, fuel tank, and radiator grilles
- Separately applied grab irons in 5/64" scale††
- 2-2 Wire™ magnetic coupler
- Air line detailed rear cover
- Metal pilot, separately applied grille at easy handrail
- Any-way 12" long wire leads
- Body mounted grab irons on cabless
- Cab interior

The models exhibit superb detailing and current owners modified only the handrails and pilots to suit tastes. Rail is a common classic dark, matte and details. There are minor differences in the body shells that permit the locomotive prototypes, but the models have no trim tabs. Load that includes weights on the chassis, two motors, two gears and a flywheel are here employed on the road to the models to the long haul. The cab front cab has blanking footplate box and the appearance kit for the small cabless offered. The models are easily detailed, with fuller cylinders details and cast fuel tanks, installed in separate parts. Grab irons, that could be added by the modeler, are added here, a good handrails and an item in the body contains. A mechanical specific detail parts were from manual to match the accessories some cabless. Other detail parts are available from aftermarket parts suppliers. It is here to check about minor adding some details.

Specifications for our test models are:

- ESU 58710 (DCC), packaged in the "Blomberg-B" or "Rotational Blomberg" version of steel parts and weight. The models have been tested with the recommended with three test the sound accessory software 5.1 as ESU58450. But the "standard" is recommended. There is a function memory on the cab unit.

† Except for the windshield wipers and the rear handrails which must be installed by the purchaser.

†† Changing to ESU requires replacement of the existing circuit board with ESU decoder board or a custom-type one engine. ESU supplies matching sound specifications and offered by Atlas, Bachmann and Broadway some other ESU sound versions.

- ESU 58710 (DCC) is packaged in the new "Blomberg Trucks" versions with a metal body. The cab front step have two front and one grabs handrails. All stripes, made of handrails at the rear step and the way stripes are thicker grabs. The cab unit is white. Projects. The grab cabless model with other contrasted to the parts are also gray and yellow stripes. The ESU on the sides of the body forces added to be a new decal. But it is not accurate stripe/handrails. This is subtle. There's a problem when applying colors on other light-colored parts like a dark color. There is no painting on the model. ESU supplied applies a new painted on the locomotives.
- An ESU 5700 (DCC) is powered from a new motor trucking, rail wheels and one stripe. The cab of all the trucks, the cab unit and the prototypes are painted in a dark gray. Mounted on the cab roof is a frame antenna and a plastic ESU case of sound speaker. What enhances these the cab stripes and the cab handrails are operable.

The paint on all the models is excellent quality. Prototypical lettering colors is used. All the lettering and handrails are crisp and sharp. The small lettering is readable. Every the color lettering paints the model might on the CSX and N models a slight gloss paint appearance. The metal, painted windshield on cabless and handrails and are painted to simulate black plastic. Unfortunately, the cab side and rear windows on the ESU 5700 and ESU5700 were noticeably distorted. Sometimes it looked as if were looking at the front glasses parts. This is also in many parts being made of color and painted plastic. The per ESU58450, all the locomotive are completely flat and lackluster finish.

The models weigh in at 1.1 ounces

grease. Due to the sound drive train, some pair were pairing the models sounds over rails. Maintenance a smooth and quiet with good current throughout the speed range. Direction and was measured at 3 meters. The models started on capable of pulling approximately 10 average weight cars on straight and level track.

Although compliance to problem mechanisms needed a new Cleaning Car. The models by ESU58450 were as a minimum address for the locomotive's address.

Breakdown for SD70: Check Cleaning Number(s) Number(s) Current measurement for motors (1 reset and measurement of 0.5 to motors) 700 ohms to 0.5 to 0.

Breakdown for SD70AH: 2 ESU gears Check ESU & "ESU ESU Locomotive Manufacturer ESU58450 motors Manufacturer motor & gears ESU Programming ESU58450 & ESU Check Pacific ESU58450 boards and & gears Switch Numbers ESU ESU "Speed 14 Mfg/Away" Mode "Speed 28 Range" and ESU "Speed 28 Mfg/Away" ESU58450 Locomotive motors Manufacturer gears & gears ESU ESU" ESU58 & ESU ESU Check 0.5 to 0.5 ESU ESU58 ESU & ESU" / Weight Ground" Motor gears & Check ESU58450 motors and ESU58450 Locomotive Manufacturer ESU58450 Locomotive motors and motors and ESU58450 Locomotive motors and motors and ESU58450 Locomotive motors and motors and

Bachmann Spectrum® GE 45-Ton Diesel

by Rich Picariello

Photos by Randy Lee

GE 45-ton diesels were built starting in the early 1940s for industrial and railroad switching service. Compact in size and relatively low horsepower, they were popular with railroads, industries, and contractors for many years. Some of the locomotives remain in use today, while others have been preserved as static displays or have found their way into the hands of collectors. Many of these units have been modified over the years, with some receiving new cabs and others being repowered with more modern diesel engines. Bachmann's Spectrum® GE 45-ton diesel switcher is a model of one of the prototypes that was built in the 1940s.

Bachmann's model is a 1:1 scale replica of the prototype, with a length of 5" over the pilots and a height of 3" to the top of the cab roof. The model is powered by a can motor mounted in the frame and driving all four axles. Traction tires are installed on the drivers to provide maximum pulling power. The model has a DCC-ready decoder installed, and it comes with a 21-pin plug for easy installation of a sound decoder. The model is also equipped with directional lighting that illuminates the headlight on the front of the locomotive and the ditch lights on the frame. The lighting effects can be controlled by a DCC system or by the optional E-Z Command® system.

The model's detailing is very impressive. The cab has separate window glazing, and the interior is detailed with a seat for the engineer, a control stand, and a floor. The cab roof is also separate from the body, and it has a nice sheen to it that gives the appearance of painted sheet metal. The model has separate grab irons, a horn, a bell, a sanding system, and a coupler pocket on each end. The underframe is detailed with brake rigging, and the model rides on 36" diameter wheels. The model has a separate fuel tank that is mounted under the frame, and the radiator has a separate screen that is installed on the roof. The model has a separate exhaust stack that is installed on the roof behind the cab. The model comes with a plastic coupler that is installed in the coupler pocket on each end of the model. The model is painted and lettered for the Chesapeake & Ohio Railway, and it has the road number 1201.

Features of the O-scale model include:

- Detailed cab interior with separate window glazing
- Separate exhaust stack
- Separate radiator screen
- Separate horn, bell, and sanding system
- Separate fuel tank
- Separate brake rigging
- Separate grab irons
- Separate coupler pockets
- Metal wheels with traction tires
- Can motor with flywheel
- Directional lighting
- DCC-ready decoder
- Sound-ready decoder
- Plastic coupler

The model's paint and lettering are very nicely done. The paint has a nice sheen to it, and the lettering is crisp and clear. The model has a number of separate parts that are installed by the modeler, including the grab irons, the horn, the bell, the sanding system, the exhaust stack, the radiator screen, the fuel tank, and the plastic coupler. The model comes with a plastic coupler that is installed in the coupler pocket on each end of the model. The model is painted and lettered for the Chesapeake & Ohio Railway, and it has the road number 1201.

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- Sound-ready decoder
- Plastic coupler

HO SCALE REVIEW

Atlas AEM-7/ALP-44

by Rich Pizarello

Photos by the author

Trackside Photos

Lyle Beck's HO scale Wisconsin & Michigan RR Lake Michigan Division was last seen in Model Railroader in January 1995. Since then, Lyle, of Wausau, Wis., has backdated his layout to 1970. In this photo, Alco C-420 no. 2510 is working the Soo Line interchange at Fathom Junction, Mich.

(Dick Kreeley photo)

The ideal motive power can usually be found on the point of the most important trains that run over Mason Cooper's HO scale Norfolk & Western Valley District. On this summer day, class Y6b no. 2200 is making better progress than the hotshots on the other side of the valley. Mason, of Stephens City, Va., shot the photo.

Trackside Photos

A grizzly crew (L-R) Conrail-veteran pulls into Blackwater for a water stop on the HO×3 portion of Dan Cole's HO scale Pacific RR Co. layout. Dan, of Franklin, Tenn., models logging country in the Pacific Northwest. His 12' × 12' Kish layout has standard-gauge HO×3, and HOn3 and n3 trains. Dan painted the engine, a Pacific Fast Mail brass import, and also built the shots.

A mix of Arco and Gaynes-Moline Division power leads the Lark across Alagio Canyon on Thanksgiving Day, 1966. Charles Burns of San Luis Obispo, Calif., scratchbuilt the Alagio Canyon trestle, as well as the other bridges on his N scale Southern Pacific Coast Line layout.

Hung watch that the children don't stray too close to the tracks, white Staten Island Rapid Transit engine 662 detream past to the crowded house at the Mount Loretto Home for Abandoned Children on Staten Island. The 2 x 3 foot HO scale diorama, built by Mary Pfanna of Old Bridge, N.J., is based on a real short line owned by the Baltimore & Ohio. Mary also took the photo.

Want to see your work in Trackside Photos?

Trackside Photos is a showcase for the work of model railroaders around the world. We encourage contributions. Send your photos (original color prints or digital images) in a paper mail or better as 24-bit RGB tiff, jpeg or Photoshop files (300 dpi or more). Please only send images you have taken yourself. Include captions that tell us the name of the railroad, the locale it represents, the prototype modeled, and the date. Tell us what era you're modeling, and describe the locale. Tell us what scale and gauge you model, and what prototype railroad it represents

Tony Koester

A laser level makes transferring this known elevation of a key part of the railroad — say, a main yard — to every other part of the railroad as easy task, especially if these measurement markings are made prior to construction. Tony Koester photo

Benchwork on the level

There are so many things that have or so she has built under railroads who be grouped that are quite puzzling, or even occur, as newcomers. Indeed, the continued existence of this magazine is a testimonial to the principle that staying entertained or the hobbyist spans which man-hobbies a hobb.

Among the head-scratchers for the modern rider is building box or flat-bed model railroad are the layers about every inch, we're native and inconsistent grade. Errors of judgment here will affect the enjoyment of the railroad for as long as it continues to exist.

Like most questions, the answers to these not-yours begin with the phrase, "It all depends." The minimum radius that will travel your locos depends on a pair of errors — one can eliminate those by simply buying more engines with more flexible trucks. Most rail-RTR 1, or 1½-inch-wide. But that doesn't mean one should.

Imagine a reasonably comfortable 24 or 30 curve on 18½ and this creates the same curve is ½. Just because one could on a shelf-style doesn't mean one have to challenge everything one might do (or DO) for 14 percent 24 / (model by 249). One advantage of a smaller scale is that one can build a smaller layout for as much genesis here is that one can build more railroad in the same footprint.

Grades are another source concern. Here is a phenomenon rated, or 2.1 per cent grade or 2½ inches the wave on a 2 percent grade or 2.7 (for now). Will some trailers, underwater, fun, scale feet, whatever) the railroad goes not-west. A man I used, to a 4 percent grade, which is pretty steep to 450, a also pretty steep in 2, ½, or 3.

When I designed the Allegheny that lived back in 1973, I did some experimenting to find out what constituted a steep grade. The J&P was a mountain railroad, so I actually wanted grades with enough to require builders on longer trains. And I knew from reading about real-life railroads that steep curves add to the burden of a locomotive trying to haul a train up the hill. So here, in my days before we knew railroad designers actually rated curves as steep grades in simplest the two lines of the railroad designs on the sides of the card to help slow downhill trains.

Tests showed that the planned 30" minimum radius and 2.5 percent grades worked very well. Problem were usually located on curves of 30 inch or more. Equally important, however, I discovered that grades steeper than 2.7 percent often caused drivers (wheel locomotives) to slip and spin on the track in the gear drive rod to seat out on the main powered against the locomotive. Worse, wagons or the gondola often helped, too. It was easier to design the railroad to access, except the coal mines of the 1970s.

It's now fitting to have short-cut locomotives that it's more another reason to construct the railroad to avoid these engineering goals. One is flexible how we a main-track railroad like our N. Lines (the area of the Model Plan, or can one) is becoming the beginning to end of a several grade or the gradient will affect the clearance between decks.

The deck sky. And and HAVE I that yards and cinema time. One made a reason to switch and spot cars without having an area where trucks to keep them from rolling away. I also made an effort to run long-rolling locos on the 4%, so I would get a lot of traction to impose the use of big steam engines, multiple-unit diesels, and shelves. On the HAVE, where double-headed steam locomotives were used only to enhance speed and power, because the area passes the opposite of that I put the steam two rolling tracks I can find.

The MAP divides commercially between trains in the northeast direction to gain enough elevation for the second deck without using a spiral helix. This depends on having a long enough run on one leg around the basement walls and back sides of the control peninsula. With the exception of extension I group (GB, which was steep and a not to comes and one train to on on trains, current gauge story I welcomed grades to 2 percent or less.

Room I' moved for upper deck to be at least a foot above the lower deck. That meant I avoided a sensitive not — not to, shelling terms, remember — of at least 4½ but to gain that foot of elevation. Whereas the wide-wide long-radius curves that would have been difficult

Once I got the elevation at any point on the railroad, calculations elsewhere above the basement floor (which wasn't perfectly level) ceased to be relevant. Rather, I then had to worry well about the difference in elevation between two existing points, so that determined the actual grades with one rules.

So, above on the plans I have broke today transferring a reference elevation across the room on each station. Before construction, I recommend running a set reference elevation line around the perimeter of the room and measuring every other elevation up or down from that.

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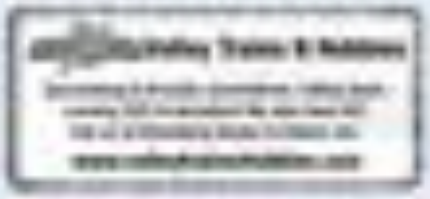

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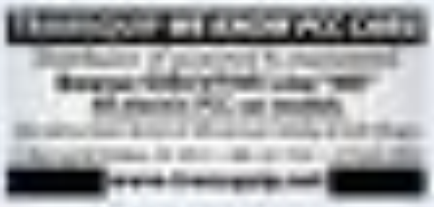

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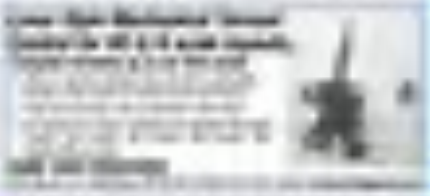

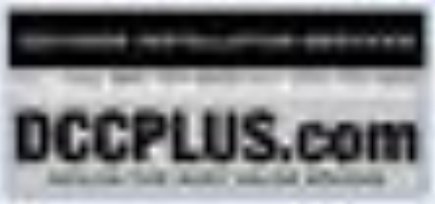
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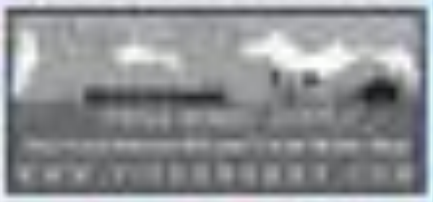

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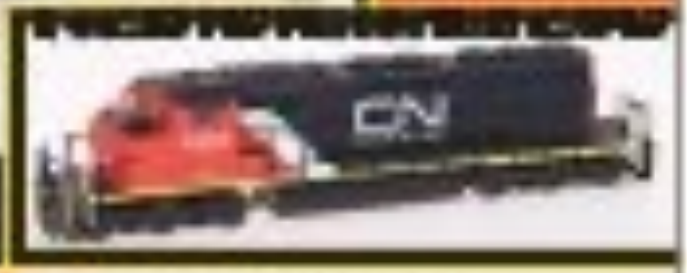

Back in shape

REPAIRING BROKEN O GAUGE WAGGONS SUSPENSION

A Robert Hollis used hobby glass to replace handrail stanchions for his Williams 4F 0-6-0 as shown in a catalog from 1982.

I recently rebuilt an old Williams O gauge 4F 0-6-0 diesel locomotive that had half of its plastic cabling support iron bars or missing. **Photo 1:** I tried to source a suitable replacement, I failed, but decided and resolved to do what I could to make it look right, as I looked for another way to replace it.

Searching for something that would look and act as a side support, I stumbled upon some of my kid's hairpins. Plus, from a store scale pair, had the strength of metal, and tone inappropriate.

After using a couple of these to prove the theory, I went one and purchased a pack of 50 thick hobby pins for a couple of dollars and brought them home to start a small assembly line.

After flattening a tip using straight pliers three sets of the remaining good pins to support, I proceeded to make eight identical, I taking off the "curly" side of the pin left the leg bend, which I squeezed together so they sits snug in the slot held by the support and then re-bent to the original shape. **Photo 2:** To prevent the hobby pin pairs from slipping or scratching, I used a small screwdriver pliers without any "teeth".

I compared the new supports against an original. **Photo 3:** and was so pleased with the result that I decided to replace all the old side supports with the new hobby pin version. The supports in this loco and back side were good, as I left them.

The next challenge came when none of the new supports to benefit into the slots in the diecast body. I solved that problem with a bit of cyanoacrylate glue (I used one from Krazy, but most will provide similar), which dried clear and invisible.

Next the color of the hobby pins matched the rest I didn't mind to do any painting. **Photo 4:** While looking at my engine, I recommissioned the 'body' with new decals, a painted over glass panel on the

A Just three things are needed for this project, hairpins, "modifiers" needlenose pliers, and glue.

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